

AMERICAN GAS ASSOCIATION

Monthly

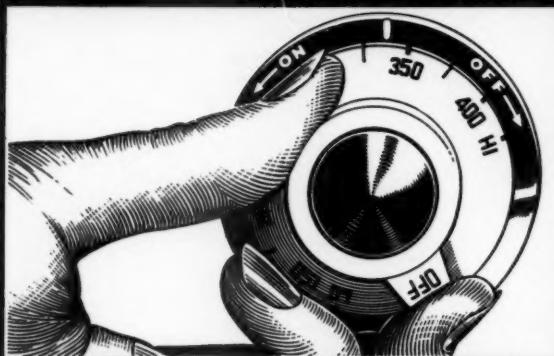


JANUARY
1957

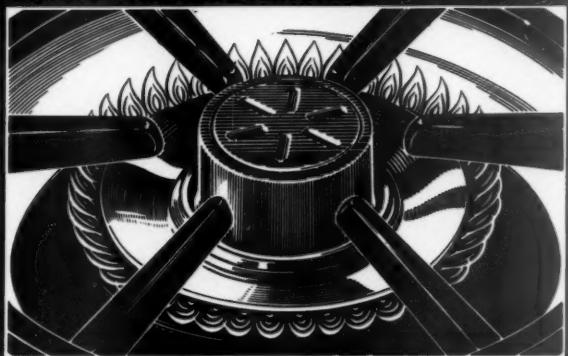
GREATEST ADVANCE IN COOKING

Top Burner Temperature Control on the new automatic GAS ranges

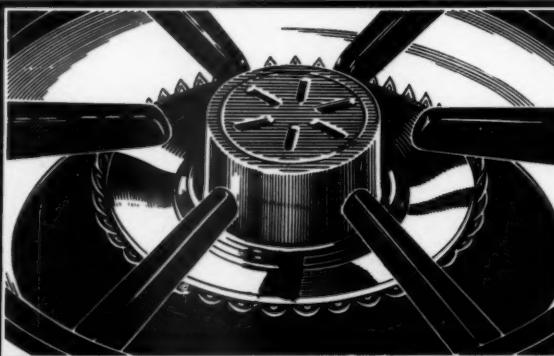
HERE'S HOW IT MAKES TOP BURNER COOKING EASIER!



1. Top Burner Temperature Control works like your oven heat control. You simply dial the right temperature for the particular food you are cooking.



2. The burner takes over from here. The flame comes on full to bring your food quickly to the cooking temperature you want. Don't touch the dial...



3. ...For the burner turns down its own flame automatically—and gradually—so that your food keeps cooking just the way you want until done.



4. This means that you can make any pot or pan you own automatic with Top Burner Temperature Control. See a demonstration at your dealer's today.

With this feature
you can make any pot or pan...



Makes of Gas ranges featuring true Top Burner Temperature Control include: CALORIC, FLORENCE, GAFFERS & SATTLER, HARDWICK, MAGIC CHEF, O'KEEFE & MERRITT, ROPER, WEDGEWOOD, and WESTERN-HOLLY.

Do you want something really new? Then get a new automatic Gas range equipped with Top Burner Temperature Control. This great new feature makes top burner cooking as easy as baking and roasting. You dial the right temperature for each food—and

your food cooks at that temperature until done. Visit your neighborhood Gas range dealer or Gas Company showrooms soon. See all that's new about the new Gas ranges...including the new rotary barbecues that give you smokeless barbecuing!

SOUTHERN COUNTIES GAS COMPANY
SOUTHERN CALIFORNIA GAS COMPANY

Only **GAS** gives you such modern automatic appliances

● Top burner temperature control is featured in a series of advertisements in newspapers throughout the territories of Southern Counties Gas Company and Southern California Gas Company



Lone Star Gas home service personnel act out home call

AS another year bows in, we pause for the annual review of the past 12 months. On the next page, three charts depict the gas industry's growth during 1956 in sales, consumers and revenues. Beginning on page 3, President Zachry goes into more details about a year that marked an important milestone—the attainment of the gas utility industry's 30 millionth customer. . . . Our colleagues over at GAMA are not unhappy about 1956 and look forward even more eagerly to 1957. Julius Klein, speaking for all the appliance makers, predicts on page 7 that sales this year will be better than ever. . . . Our vigorous sister industry, serving LP-Gas to domestic customers off the mains, continues to grow like Jack's beanstalk. Total sales increased by more than a million gallons—the largest gain in a single year. As our three authors from Phillips Petroleum explain on page 9, these sales include gas for many uses other than cooking and heating. . . . Last month our Bureau of Statistics told us how many gas appliances we could expect to have sold by 1975. It added up to a tidy figure—large enough to make some people wonder if the gas would hold out. As if in anticipation, the Bureau this month takes a long-range look at gas supply and total energy demand by 1975. You'll find the conclusions—on page 16—both thought-provoking and inspiring.

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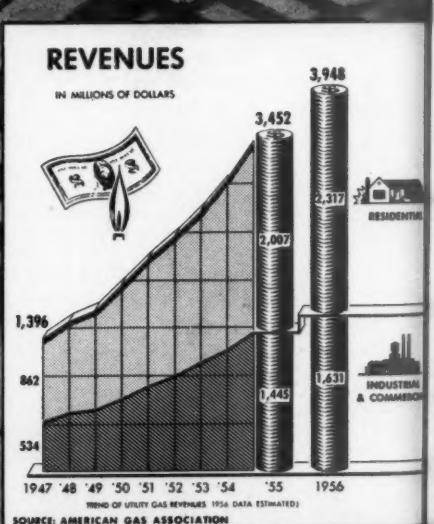
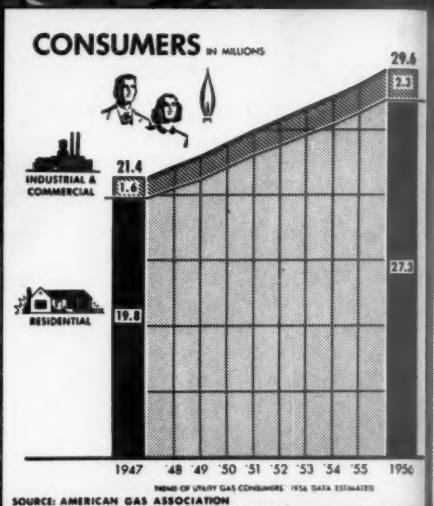
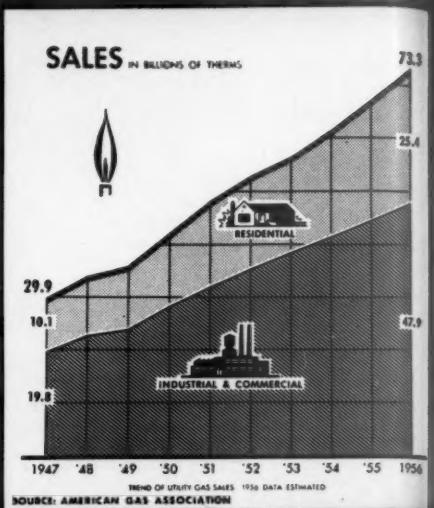
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THIS MONTHLY IS INDEXED BY THE INDUSTRIAL ARTS INDEX

VOL. 39

NO. 1

• Subscription \$3.00 a year - Published eleven times a year by the American Gas Association, Inc. Publication Office, 73 Main Street, Brattleboro, Vt. Publication is monthly except July and August which is a bi-monthly issue. Address communications to 420 Lexington Ave., New York 17, N. Y., including all manuscript copy for publication. The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein. Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, Feb. 10th, 1922, under the Act of March 3, 1879. Cable addresses: American Gas Association, "Amerigas, New York"; American Gas Association Testing Laboratories, "Amerigaslab, Cleveland."



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ISSUE

Reach 30 millionth customer in 1956

By CLARE H. ZACHRY

*President, American Gas Association
President, Southern Union Gas Company*

The gas utility and pipeline industry, now serving more than 30 million customers through half a million miles of gas mains in every state and the District of Columbia, continued its dynamic growth pattern during 1956 to reach record-breaking peaks. Even greater achievements in all phases of operation are confidently expected in 1957.

With revenues from utility sales now at an all-time high of nearly four billion dollars, residential, commercial and industrial uses of gas are increasing steadily. Meanwhile, natural gas reserves have also reached unprecedented peaks.

Record-breaking expenditures of \$1.65 billion during 1956 for new facilities to serve more customers reflected the dramatic progress of the industry. The gas industry currently has total assets of about \$17½ billion with the prospect of reaching \$24 billion by 1960 for almost a quadruple gain in a decade and a half.

A major gas industry development during 1956 was the completion of the \$230 million "Scenic Inch" pipeline from the Southwest to the border of Canada to bring natural gas to the Pacific Northwest for the first time. The last large region of the U. S. to receive natural gas, the Pacific Northwest is expected to make significant contributions to the gas industry's continued growth in the immediate future, meanwhile boosting its own industrial stature to new heights.

During 1956, the gas utility industry served an average of 29,602,300 customers, a new peak, including about 219,300 LP-Gas customers served directly by gas utility companies. This was a gain of 1,123,500 customers over 1955, when the industry was serving 28,478,800 residential, commercial, industrial and other (such as armed forces and other government installations) customers. It is estimated that there are about eight million customers served with LP-Gas in areas not on utility mains.

An average of 25,019,000 customers received natural gas during the year, a gain of 2,154,800 customers and an increase of 9.42 per cent over the 22,864,200 natural gas customers served during 1955.

Manufactured and mixed gas customers averaged 4,364,000 during 1956. Approximately 1,400,000 former users of manufactured or mixed gas became natural gas customers during the year.

Total sales by the gas utility industry during 1956 reached 73.35 billion therms, a new record. This was a gain of 9.62 per cent over the 66.91 billion therms sold in 1955.

Natural gas sales achieved a new high of 69.90 billion therms, up 10.36 per cent over the 63.34 billion therms sold a year earlier. Manufactured and mixed gas sales totaled 3.37 billion therms.

Revenues from utility sales of gas achieved a new record total of \$3,948 million, a gain of 14.35 per cent over the previous record high of \$3,452 million established in 1955. Natural gas revenues increased 17.29 per cent to a total of \$3,483 million, also an all-time record. Manufactured and mixed gas revenues were \$445 million, compared with \$463 million in the previous year. Gas industry revenues for 1957 are estimated at \$4,260 million.

Approximately 20,000 miles of gas mains were constructed in 1956 to bring the total mileage to 517,000.

Underground storage operations have also been increased substantially. At the start of 1956, there were 178 underground storage pools located in 19 states. The 6,746 active storage wells in these pools had an ultimate capacity of 2.1 trillion cubic feet.

An additional ten pools under construction at the start of 1956 were estimated at a capacity of 81.7 billion cubic feet of storage space for the underground storage of natural gas. With new gas househeating customers to be added at an estimated rate of 1.3 million annually during the next few years, underground storage of gas becomes an increasingly important factor in stabilizing the gas load.

The gas industry spent \$61 million on construction of under-

● Year-end review reveals continued growth for gas utility and pi...stry,

ground storage facilities in 1956 and will spend \$45 million on such facilities in 1957.

Proved recoverable reserves of natural gas at the beginning of 1956 were at a record high of 223.7 trillion cubic feet, an increase of about 12 trillion cubic feet over reserves at the start of 1955. These new reserves more than offset record net production of 10.1 trillion cubic feet in 1955, up from 9.4 trillion cubic feet the previous year.

The gas industry will continue to grow on all fronts in 1957.

When the 30 millionth customer was added in mid-December, our industry could point to doubling its number of customers in less than two-and-a-half decades. An average of 30.5 million customers will be served in 1957, with utilization of 77.6 billion therms of gas. By 1960, the prospect is for the sale of 92 billion therms, of which 32 billion therms will be residential sales. And in 1965, we should show aggregate sales of 116 billion therms, an increase of almost 73 per cent from the current level and nine times the figure of two decades ago.

The number of customers will continue to increase steadily to an estimated 33 million—31 million of whom will be residential customers—in 1960 and 38½ million by 1965, including 35.3 million residential users.

With gas replacing oil as the leading heating fuel for U. S. homes, househeating customers of gas utilities will jump from 16 million now to 21 million by 1960 and 27½ million by 1965. Gas-heated homes represented about 46 per cent of the more than 49 million occupied homes and apartments in the U. S. as of mid-1956.

Construction expenditures rise

The industry's record construction expenditures of \$1.65 billion during 1956 are expected to be surpassed in 1957 by an estimated 18 per cent. The A. G. A. Bureau of Statistics forecasts 1957 expenditures at \$1.954 billion. The gas industry's expenditures will be an important factor in the two per cent U. S. gain for private building construction predicted for 1957 by the U. S. Commerce and Labor Departments. About 96 per cent of the gas industry's expenditures during the coming year will be for facilities of natural gas systems.

Expenditures between now and 1965 to meet the growing demand for gas service in all parts of the country will total about \$19 billion, almost twice the amount spent in the previous ten years and more than 20 times as great as the amount spent in the decade immediately preceding World War II.

A field in which the gas industry is now focussing a major share of its effort is air conditioning. The A. G. A. and manufacturers together have spent 1½ million dollars in 1956 alone to develop gas air conditioners. Compact design and economy and reliability of operation are making gas air conditioning units a reality of today—not a dream of the future.

At least ten reputable manufacturers are now in the gas air conditioning field—already producing units or developing field test units or conducting intensive research before starting production.

Surveys have shown a present market for a quarter of a

million central air conditioning home units, a five-fold increase in air-conditioned manufacturing plants by 1980 as compared with 1953, and a constantly growing market in the commercial field.

Gas air conditioning units for the home include exciting new developments in the field of year-round climate control by combined heating-cooling systems, which will control humidity as well as temperature throughout the house. The gas industry recognizes that air conditioning is the "wave of the future" in the home and is going all out to meet it.

An all-time record of 2,837,000 automatic gas water heaters were shipped by manufacturers during 1956. This volume was accompanied by a marked upgrading in size and quality.

Exceeding two million units for the tenth straight year, shipments of free-standing gas ranges totaled 2,036,000 and this figure does not include approximately 160,000 built-ins, the popularity of which has been growing at such a fast pace that built-ins may provide ten per cent of the gas range market in 1957.

Shipments of direct heating units climbed to 1,700,000 for a gain of 15 per cent over 1955. This substantial increase more than offset small declines for wall heaters and floor furnaces, which totaled 301,000 units and 134,000 units, respectively, during 1956.

Automatic gas clothes dryers surged to 470,000 units, a gain of nearly 28 per cent over last year's 368,000. Makers of gas incinerators also enjoyed another good year and anticipate a continued increase in demand in the immediate future.

Boiler shipments also achieved a record high of 98,000 units, a gain of nearly nine per cent above 1955. Warm air furnaces approximated 829,000 units compared with record shipments of 835,000 in 1955. Conversion burner shipments aggregated 198,000 for a slight decrease from 209,100 the previous year.

A boom in home modernization and the growth of new markets helped gas appliance and equipment manufacturers achieve an impressive year despite a 15 per cent drop in new housing starts.

More than 90 million gas appliances now are used by residential customers of the gas industry. The outlook for the near future is very bright, with potential sales of 57 million additional appliances seen by 1960—and a staggering total of 300 million predicted by 1974.

The gas industry took an important step forward during 1956 when it completed arrangements for its first use of national network television. Scheduled to start Thursday, Jan. 10, 1957, the television program was made possible by the unified efforts of gas utilities, transmission companies and manufacturers who subscribed more than \$21¼ million in a common purpose for the good of the entire industry.

The gas industry will sponsor on alternate Thursdays the last half-hour (10:30-11:00 P.M., EST) of the popular "Playhouse 90," on the Columbia Broadcasting System network of more than 125 stations. Julia Meade, widely known to television viewers because of her appearances on other top TV shows, will present messages from the gas industry on this

Industry, with records again set for customers, sales and revenues in 1956

highly-rated 90-minute dramatic program featuring top actors and actresses.

In addition to providing support for the new television show, utility and pipeline companies subscribed more than \$3 million in 1956 to the Promotion, Advertising and Research (PAR) Plan, which completed its 12th successful year of co-ordinated activities embracing promotion, advertising, utility company research, pipeline research, and public information.

PAR's National Advertising Program scheduled more than \$1 million in 30 magazines with a reader circulation of about 44,000,000. This represented 206 pages of advertising with a total of 226,867 sales messages. Many major manufacturers cooperated with the gas industry in space-sharing advertising.

The PAR Public Information Program expanded its activities to build a strong public relations team to benefit all segments of the industry. Among the principal projects were increased services to win employee understanding and support, more emphasis on telling the facts on government in gas, greater stimulation of coordinated local PR action, and a stepped-up program of favorable national publicity on gas.

Through special campaigns, merchandising aids, trade show exhibits, educational campaigns, tie-ins with motion pictures and television, and many similar projects, PAR's promotion activities reached new highs in the interest of expanding the appliance market and the gas industry as a whole.

The Gas Industry Development Program intensified its nationwide activities through round-table conferences for gas company executives and clinics for sales managers in many cities, as well as two major regional sales conferences. A complete sales and promotional program to increase automatic gas range sales was made available to gas utility companies for use at the local level.

Sponsors Mrs. America

The Mrs. America Contest, sponsored by A. G. A. for the fourth year, is making the winner (this year Mrs. Cleo Maletis of Portland, Ore.) synonymous with the national gas industry in the minds of America's homemakers. One hundred gas utility companies, representing 15 million meters, participated in 1956. The 1957 contest will be held at Fort Lauderdale, Florida.

More than 5,500 gas appliances and accessories were tested by A. G. A. Laboratories for compliance with requirements and the privilege of displaying the Laboratories' Approval Seal or Listing Symbol. Many of these were advanced designs and the majority incorporated major improvements.

Central gas heating appliances, which accounted for about half of all appliances tested, featured compactness and eye-appeal design. Most of these appliances were also designed for operation at higher static pressure, so that they can be readily used with add-on cooling units for summer air conditioning.

Automatic top burner controls are available now on practically all ranges. Several manufacturers equipped ranges with an oven thermometer which operates to turn off the gas when food has been cooked to the exact degree desired.

Sales and revenues

TOTAL GAS UTILITY INDUSTRY CUSTOMERS, SALES AND REVENUES

1956 Compared with 1955 (Preliminary)

	1956	1955	Per Cent Change
CUSTOMERS (at December 31)			
Residential	27,788,800	26,903,000	+ 3.29
Commercial	2,192,800	2,127,000	+ 3.09
Industrial	128,300	123,300	+ 4.06
Other	30,000	27,000	—
Total	30,139,900	29,180,300	+ 3.29
CUSTOMERS (Average)			
Residential	27,324,700	26,282,600	+ 3.96
Commercial	2,122,200	2,047,500	+ 3.65
Industrial	126,400	121,200	+ 4.29
Other	29,000	27,500	—
Total	29,602,300	28,478,800	+ 3.95
SALES (Thousands of Therms)			
Residential	25,390,500	22,386,700	+ 13.42
Commercial	6,648,100	6,029,300	+ 10.26
Industrial	38,864,300	35,350,500	+ 9.94
Other	2,446,700	3,148,400	—
Total	73,349,600	66,914,900	+ 9.62
REVENUES			
Residential	\$2,316,993,000	\$2,007,450,000	+ 15.42
Commercial	484,360,000	424,090,000	+ 14.21
Industrial	1,077,405,000	937,591,000	+ 14.91
Other	68,925,000	83,069,000	—
Total	3,947,683,000	3,452,200,000	+ 14.35

NATURAL GAS CUSTOMERS, SALES AND REVENUES

1956 Compared with 1955 (Preliminary)

	1956	1955	Per Cent Change
CUSTOMERS (at December 31)			
Residential	24,124,000	21,933,000	+ 9.99
Commercial	1,951,000	1,774,000	+ 9.98
Industrial	108,000	92,000	+ 17.39
Other	28,000	25,000	—
Total	26,211,000	23,824,000	+ 10.02
CUSTOMERS (Average)			
Residential	23,058,000	21,084,800	+ 9.36
Commercial	1,833,000	1,665,700	+ 10.04
Industrial	101,000	88,700	+ 13.87
Other	27,000	25,000	—
Total	25,019,000	22,864,200	+ 9.42
SALES (Thousands of Therms)			
Residential	23,027,100	20,085,700	+ 14.64
Commercial	6,222,300	5,534,500	+ 12.43
Industrial	38,234,200	34,600,300	+ 10.50
Other	2,413,900	3,116,900	—
Total	69,897,500	63,337,400	+ 10.36
REVENUES			
Residential	\$1,967,954,000	\$1,656,883,000	+ 18.77
Commercial	420,822,000	351,897,000	+ 19.59
Industrial	1,027,692,000	880,225,000	+ 16.75
Other	66,712,000	80,587,000	—
Total	3,483,180,000	2,969,592,000	+ 17.29

Operational improvements were made in automatic gas clothes dryers, a number of which have increased their drying speed to insure the fact that gas continues to provide the fastest way of drying clothes.

The continuing high level of research activity promises continued industry progress in the appliance field. Twenty PAR-financed research projects, seven of them completed, are under study at the Laboratories. Major emphasis in 1956 was on the development of domestic gas incinerators and commercial cooking equipment. Eleven research bulletins and reports were published, covering industrial and commercial gas research, and domestic gas utilization research.

The inspection program was accelerated by increasing unannounced visits to manufacturing plants and expansion of field tests. Eighteen revised appliance and accessory standards were adopted and 19 revised standards were submitted to the industry for study. Indication of the widespread interest in the gas industry's national standards was reflected in an all-time high for sales of requirement publications.

"Growth" is the byword of the gas utility and pipeline industry—today and for years to come. There is every reason for

the greatest optimism regarding the prospects for many millions of additional satisfied customers of clean, economical, reliable, convenient gas service. The industry will continue to meet the needs of its residential, commercial and industrial customers for efficient, up-to-the-minute gas appliances and equipment.

Gas air conditioning, it should be emphasized, presents an enormous potential for our industry. Modern installations are already proving themselves, from shopping centers to factories, from homes to hotels and hospitals. Gas air conditioning must be regarded as an accomplishment of today, not a promise for tomorrow.

The growth picture of the gas industry can be seen in our outlook for net annual production of natural gas to 22½ trillion cubic feet by 1975—more than double the 1955 net production. Meanwhile, natural gas reserves are expected to continue to increase steadily, just as they have been doing year after year.

The gas industry will continue to provide the best service possible to more than 30 million present customers and to the millions of new customers to be added in the future.

By A.G.A. BUREAU
OF STATISTICS

Preliminary report on rate changes 1955

The preliminary results of the ninth annual study of rate changes, prepared under the sponsorship of the Rate Committee of the American Gas Association, has just been released.

A final report will be issued in February and will include data for additional companies who have as yet not responded on the survey.

Replies were received from 123 utilities effecting 107 increases and 39 decreases. Those companies submitting complete data report increases amounting to \$51.6 million applicable to nearly nine million consumers, and decreases of \$6.9 million affecting one million consumers. Excluded from these data are the effect of changes in the level of automatic adjustment clauses, unless such clause has been initially instituted, or deleted.

The accompanying table presents the number of rate changes yearly and the trend of rate changes, for those compa-

nies reporting these statistics annually.

Preliminary indications show the number of customers affected by rate changes in 1955 almost reached the peak established in 1953, while the net dollar difference is at the third highest level since 1947.

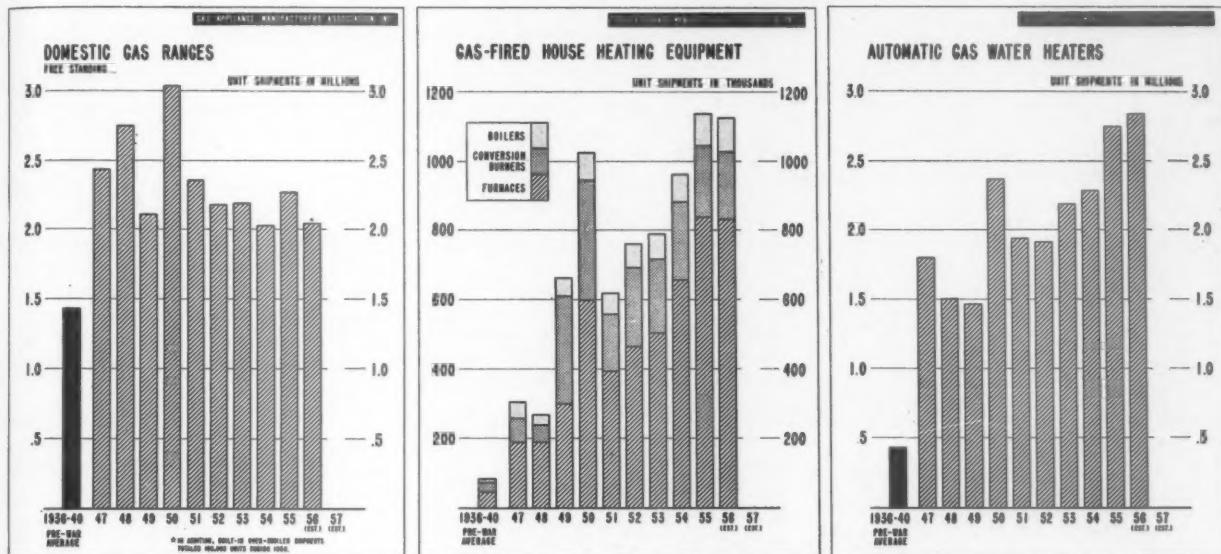
Change in the wellhead price of gas and increased labor cost were the two primary reasons set forth by those companies seeking higher rates. Companies effecting lower rates were principally motivated by the desire to sell more gas for specialized purposes, chiefly space heating.

The data contained in this survey refer only to sales to ultimate consumers by distribution companies, and reflect the revenue effect of rate changes that have appeared in the A.G.A. "Rate Service." They exclude changes in "city gate" rates, and in rates charged by pipelines to main line industrial customers.

THE EFFECT OF GAS RATE CHANGES, 1947-1955

Year	Increases			Decreases		
	Number of Changes	Customers Affected (Thousands)	Amount (Millions)	Number of Changes	Customers Affected (Thousands)	Amount (Millions)
1947	42	2,637	\$12.0	3	203	\$ 0.4
1948	99	3,266	31.9	4	5	0.01
1949	79	6,284	35.2	8	25	0.3
1950	52	1,640	15.6	59	3,368	17.2
1951	50	1,935	22.0	38	894	5.8
1952	99	3,562	35.7	43	759	3.4
1953	99	9,609	57.6	17	943	1.6
1954	121	6,561	61.1	53	1,717	10.9
1955 prelim	107	8,991	51.6	39	1,012	6.9

GAMA predicts sales advance in '57



By JULIUS KLEIN

President, Gas Appliance
Manufacturers Association
President,
Caloric Appliance Corporation

New markets and a boom in home modernization enabled the gas appliance and equipment industry to offset the effect of a drop in new-home starts during 1956 and there are strong indications that the industry will top its 1956 performance in 1957.

Manufacturers in some categories equalled or surpassed all-time records established in 1955. For example, manufacturers of automatic gas water heaters shipped 2,837,000 units, 3.2 per cent above the 1955 peak, and they are confident that gas water heaters will approach or top the three-million mark in 1957.

This record unit volume is accompanied by a marked upgrading in size and quality. Larger families, extra bathrooms, automatic washing machines and dish-

washers require more hot water, and these requirements provide a continuing stimulus to the demand for bigger and better automatic gas water heaters.

Shipments of gas central heating equipment were about even with the 1955 peak, and the 1,125,000 unit total for 1956 established gas as the number one heating fuel in the nation's homes.

Warm air furnaces approximated 829,000 units, down slightly from the record 835,000 shipped in 1955. Boilers established a new all-time high of 98,000 units, nearly nine per cent above 1955, while conversion burners slipped from 209,100 units to 198,000.

Continuation of the multi-billion-dollar expansion of the natural gas pipeline system during the past year enabled gas utility companies and manufacturers in many areas to cut into the backlog of thousands of applications for gas house heating that were held up pending completion of expanded transmission and distribution facilities.

Gas direct heating equipment benefited

substantially from the home-modernization trend, particularly from projects involving the addition of rooms or enclosed porches. Shipments of the direct heating units, designed to heat the room or space in which they are installed, totaled 1,700,000 units, or more than 15 per cent above 1955.

The increase in direct heating shipments more than offset losses in vented recessed wall heaters and floor furnaces which were adversely affected by a decline in housing starts in areas where these units are most popular. Wall heater shipments were off 15 per cent to 301,000 units, and floor furnaces down 13 per cent to 134,000.

Gas clothes dryers continued to move ahead strongly to establish an all-time high, with shipments topping the 450,000 mark for the first time in history. The clothes dryer demand continues to mount, and shipments in 1957 will undoubtedly set another record somewhere beyond the half-million mark.

Makers of gas incinerators enjoyed a

satisfactory year, and have high hopes for 1957. New and improved models, a growing understanding on the part of municipal officials of the virtues of the gas incinerator, increased interest in incinerator sales by merchandising utility companies, and the acute disposal problems in many communities all point to a rapid increase in demand.

Shipments of conventional or free-standing gas ranges were about ten per cent below the 1955 total, but shipments exceeded two million units for the tenth consecutive year, and a substantial part of the difference was made up in shipments of built-ins which enjoyed an upsurge in sales. I believe the built-ins will provide more than ten per cent of the gas range market in 1957, with built-in shipments passing the quarter million mark.

The built-ins, which hitherto have been utilized mostly in new homes, are now in greater demand for existing homes undergoing kitchen modernization. This demand will be stimulated further in 1957 by such national campaigns as Operation Home Improvement and ACTION—American Council to Improve Our Neighborhoods.

These campaigns are particularly important because they encourage improvement projects which will take up the slack should new home starts follow the predictions of a further decline in 1957. There are other important factors which provide the basis for optimism throughout the gas and gas appliance industries.

The arrival of natural gas in the Pacific Northwest in the latter part of 1956 sparked a demand for all types of gas appliances and equipment—residential, commercial and industrial. Manufacturers, particularly those on the West Coast, noted a quick surge in orders from Portland and Seattle when the pipeline reached those cities. The demand for gas service and appliances in the Northwest will continue to grow as additional communities are connected to the pipeline.

Continued expansion of transmission and distribution facilities, in which the gas industry will invest \$7 billion in the

1956-1959 period, will bring new or additional supplies of natural gas into hundreds of communities from coast to coast, to insure greater fuel supplies and a constantly growing market for gas appliances and equipment of all kinds.

The availability of adequate supplies of the natural fuel, and the re-examination of main extension policies by many utility companies will be of great importance in major new home developments, many of which were deprived of gas service in the past because of the lack of transmission and distribution facilities.

I am sure we'll see a great wave of all-gas homes as the result of unprecedented cooperation between gas companies and builders. In other words, whether new home starts increase or decrease, the gas appliance industry will equip an increasing percentage of the new dwellings.

Reason for optimism

Perhaps the most important reason for optimism can be found in the gas industry's own plans for exploitation of all of its opportunities for service and sales.

All of the industry's important past promotion programs will be carried on again—the PAR Plan, Old Stove Round-Up, Mrs. America, New Freedom Kitchen and Laundry operations—and on a larger scale. In addition, new activities will provide sales impact unprecedented in our business.

Starting in January, the gas industry will have a top-flight network television program for the first time. Utility companies subscribed the bulk of more than \$2,250,000 to underwrite this venture into this powerful medium, but the support of pipeline companies and manufacturers is indicative of a new spirit of cooperation among all segments of the industry that is certain to be reflected in sales.

Another example of effective cooperation is the formation of the Gas Unity Committee and the development of its program which involves utility companies, LP-Gas dealers and manufacturers

as well as A. G. A., GAMA and LPGA in campaigns to sell the advantages of gas to the American homeowner—city gas or LP-Gas, wherever he lives.

The unity program is already operating in one form or another in eight states and is spreading rapidly. Newspaper advertising and highway signs, jointly sponsored by gas utility companies and LP dealers, are being used regularly and effectively. In addition, sales departments are exchanging market information and leads to promote maximum productivity in sales solicitations and follow-ups.

There are many other examples of the industry's determination to do an adequate promotion job. The Gas Equipment Manufacturers Committee, a group of gas industry suppliers who have nothing to sell to the general public, are about to enter the third year of the GEM program of national consumer advertising of the seven household uses of gas. The equipment manufacturers plan to increase their expenditures this year to more than \$300,000.

The GAMA domestic gas range division is working out the details of a promotion program for the next two years, which is by far the most ambitious and comprehensive cooperative effort ever contemplated by any appliance or equipment division in the industry.

These and other promotion programs, coupled with the public relations efforts of GAMA, A. G. A. and LPGA, mean that our gas and gas equipment will be kept constantly in the minds of all of our publics. The virtues of gas as a fuel and of modern automatic gas appliances as aids to better living will be better known during 1957 than ever before.

We have the finest array of appliances and equipment ever offered to consumers. We have better fuel distribution than ever before. With a zooming population we have the greatest market in history. And we have the best supported program to take advantage of our tremendous potential.

Will 1957 be a good year? I don't see how it can miss.

Public Information Bureau reveals public ownership trends

a PAR activity

THREE in a periodical series of executive summaries entitled *Private Ownership Trends* have been sent by the Public Information Bureau to A. G. A. member company delegates.

The series, published as a PAR Public Information Activity, documents steps that mu-

nicipal bond houses and other outside groups are taking to encourage public ownership of utilities. Data were gathered by cooperating member companies and were tabulated and interpreted by the A. G. A. Bureau of Statistics.

Report No. 4 dated Nov. 21, highlights trends in Alabama, Tennessee, and the New

England area. Report No. 5 dated Nov. 27, details the attempt—negated by the Idaho Supreme Court—of 12 southern Idaho communities to franchise locally organized, non-profit cooperatives to operate municipal gas distribution systems. The most recent, Report No. 6 dated Dec. 14, points out further developments in Idaho and in Alabama.

LP-Gas sales set new record in '56

By GEORGE R. BENZ
PAUL W. TUCKER
W. F. DEVOE

Phillips Petroleum Company
Bartlesville, Oklahoma

● This report on the LP-Gas industry is prepared annually by Phillips Petroleum as an industry service. Mr. Benz is manager of Phillips' engineering department, Mr. Tucker is the department's technical representative, and Mr. DeVoe is LP-Gas sales manager. The report appears in the MONTHLY in an abridged version.

—Editor

P-Gas sales in 1956 appear to have increased by a record breaking 1,001,000,000 gallons sending total sales to an estimated 6,997,000,000 gallons. This is a 16.7 per cent increase over 1955 total sales.

Increases are impressive in chemical, motor fuel and house heating. New applications continue with production, storage and transportation facilities keeping pace with ever increasing demand. Another record year is seen in 1957.

Domestic and motor fuel: The combined domestic and motor fuel market for LP-Gas in 1956 is estimated at 4,068,000,000 gallons, which is an increase of 615,000,000 gallons or 17.8 per cent over 1955. House heating, still the largest single factor in the domestic growth, continues to move north as more people become familiar with and are sold on the convenience of gas.

The expansion and extension of natural gas lines into new areas causes more people to become "gas conscious." LP-Gas is popular in new housing developments and central heating is becoming more widespread in new homebuilding and remodeling.

Tank lease or loan programs have increased domestic demand tremendously in some areas, although these programs also greatly increase the capital which the distributor must have.

Motor fuel: It is estimated that almost 850 million gallons of LP-Gas were used as motor fuel in internal combustion engines in 1956. This is a 30 per cent increase over 1955 and represents approximately 12 per cent of total industry sales. Motor fuel sales were up significantly in nearly all parts of the country with the biggest users being trucks, buses, tractors, industrial trucks, irrigation and drilling engines.

Appliances: Sales of major heating appliances were generally up in 1956. Range sales were down 3.9 per cent. Automatic LP-Gas water heater sales are estimated at almost 350,000, the same as 1955. Sales of warm air furnaces are estimated at 78,000, up about 8 per cent over 1955. Sales of direct heaters and recessed wall heaters are estimated at 496,100. Floor furnace sales were down by 18 per cent to 32,500 in 1956.

The increase in tank sales is estimated as up over 15 per cent with 500 and 1,000 gallon above ground tanks showing the largest increases.

Industrial and miscellaneous: LP-Gas for industrial and miscellaneous uses are estimated at 614,000,000 gallons, which is an increase of 10.4 per cent or 58,000,000 gallons. Part of this increase is due to the inclusion of refinery fuel gases containing LP-Gas in this category.

The continued increase in business activity, plus new uses kept the demand for LP-Gas as an industrial fuel on the upswing. The addition of standby plants continues as protection against winter shut-downs. The actual demand for this portion of the industrial load is determined by the weather.

Gas manufacturing: The utility use



of LP-Gas maintained its upward swing with an estimated total of 234,000,000 gallons, or a 9.5 per cent increase over 1955. One new refrigerated storage installation for utility use was completed and much interest is being shown in underground storage by utilities for peak shaving. Interest is shown also in reforming LP-Gas for utility gas purposes. Again, cold weather is the primary determining use factor.

The joint gas promotion (gas utility companies and LP-Gas companies) took a big step forward by the formation of the Gas Unity Committee.

Chemical manufacture: Although the steel strike delayed the construction of numerous petrochemical plants, the sales of LP-Gas as a raw material for the manufacture of chemicals and chemical intermediates continued to gain at a high rate. It is estimated that the increase over 1955 was 20.1 per cent, making the total volume 1,642,000,000 gallons so used during 1956.

As in 1955, the increase was sparked by the growing demand for polyethylene, and the large number of polyethylene plants now under construction assures another substantial gain for 1957. In addition to polyethylene, interest in other polyolefins (polypropylene, polybutylenes and polybutadiene) is high.

Despite the drop in automobile production, demand for synthetic rubber expanded, and new butadiene and styrene plants are being built and existing units expanded. Since butadiene is a promising chemical intermediate it is expected that a large volume will be used in other than the manufacture of synthetic rubber.

Large volumes of LP-Gas were used in the production of phenols, acetones, glycols, amines, detergents, additives, alcohols and many other oxygenated hydrocarbons. The production of nitroparaffins and their derivatives continued to increase.

Rubber components: The use of LP-Gas in the manufacture of synthetic rubber components climbed another 8.1 per cent to an estimated 439,000,000 gallons in 1956. This increase is impressive coming on top of last year's 32 per cent increase. Although some synthetic rubber was stockpiled in 1956, next year should continue strong.

Supply: Twenty-six new plants came on stream in 1956 to boost LP-Gas production capacity by almost 1,120,000

gallons per day. This additional production capacity, plus increased production at existing plants and the volume in underground storage, enabled industry to meet the record breaking demand. It is estimated that 15 new plants will be added in 1957 to further increase production capacity by almost three-quarters of a million gallons per day. In addition, several existing plants are adding facilities and equipment which will also increase the production potential.

It is estimated that approximately 75 per cent of the LP-Gas now comes from natural gasoline plants. More than 50 per cent of the liquids produced at natural gasoline plants in 1956 were LP-Gases, with many of the newer plants reaching a ratio of 60 per cent or better. With additional investments and higher operating costs more LP-Gas can be recovered at existing plants but this is economically feasible only with a better and more stable price situation.

There have been continued large increases in LP-Gas storage facilities, both conventional above ground steel storage tanks and underground storage installations. The estimated available underground storage capacity totals almost a billion gallons and there is about one-third of a billion gallons capacity planned or under construction. The most recent information indicates that this underground storage capacity was substantially full on December 1 of 1956.

Transportation: Transportation facilities kept pace with the increased production and demand. Four new pipelines were announced or under construction for LP-Gas and refined products. One new LP-Gas tanker was placed in service during the year. There were an estimated 22,000 tank cars in LP-Gas service at the peak of the season. This number would have been higher had the steel strike not postponed delivery of some cars scheduled for the last quarter.

The railroads, recognizing the increased costs of owning and operating tank cars and recognizing the inroads which truck transportation has made in the transportation business, are seeking new ways of remaining competitive. Some progress was made in this direction with the approved mileage allowance increase. However, proposed

(Continued on page 26)

Flaming voo draws crow L



Woo (gas) w Luau



Luau chefs say these special Chinese gas ranges are best type for preparing fine oriental dishes



Attractive interior carries out South Seas motif set by building's thatched roof and flaring volcanic pool

A popular Miami restaurant, the Luau, depends not only on gas cooking to send its customers away satisfied, but on gas to create a novel display that brings the customers in.

This traffic-stopping display is a simulated volcano flaming in front of the building to give a South Seas atmosphere to go with the establishment's oriental cuisine.

The actual "volcano" is a small kidney-shaped pool with rough, irregular volcanic stones rising a foot or two above the surface of the water. Slightly below the water's surface and evenly spaced about the pool are five small gas pipes. After dark, gas bubbles up from these pipes and burns on the surface of the pool in a weaving, drifting, billowing flame.

This shimmering sheet of flame lights up the front of the building and shines through the picture windows into the dining area.

The novelty was a success from opening night, when two policemen were kept busy unsnarling traffic. Usually a restaurant with a first-rate location and excellent cuisine needs a period of months to build up its clientele, but the Luau became a profit-maker overnight. During its first 60 days of operation the

restaurant served an average of 1,000 full course meals per day, though its seating capacity is only 200.

Some of the modern gas appliances in the Luau's kitchen would appear odd to anyone unfamiliar with special ranges used to prepare oriental foods.

The major share of food preparation is done at a long line of these special gas ranges. According to Chinese chefs, only in the deep pans of these ranges can be prepared the Hawaiian, Polynesian and Chinese dishes of different meats combined with variation of bean sprouts, water chestnuts, celery, peppers, pod peas, bamboo shoots, mushrooms and onions.

More familiar commercial gas cooking appliances are also part of the kitchen layout. Automatic gas fryers are a must for frying noodles, sweet and sour pork, and shrimp. A conventional roasting oven is used for roasting duck, beef and pork. It also doubles for barbecuing meat. Two pyrastoves are used for boiling meats, some vegetables and for preparing soup stock.

At the Luau, it's really an all-gas operation. Gas brings people to the door and the excellent food cooked by gas sends them away happy and eager to return again.



Heading EEI and A. G. A. committees on electronic machine developments are R. W. Britt, Wisconsin Electric Power, and E. T. White, Public Service Electric and Gas, Newark, N. J.



Group discussions, two hours in length and presented twice each day, were a seminar feature. Group above discussed feasibility of medium-sized equipment



Feasibility studies for large-sized electronic accounting equipment was subject of this group, whose members discussed such factors as programming, system design

Hold fourth seminar on electronics

Delegates from all divisions of the public utility industry turned out to study technological advances, and to exchange ideas and information at the Fourth Annual Electronics Seminar, December 3-5, 1956, in Cincinnati, Ohio.

The three-day seminar was under the joint sponsorship of the A. G. A. Accounting Section and the EEI Accounting Division.

From the opening remarks by R. G. Schneider, chairman, EEI Accounting Division, to the closing remarks by W. D. Sweetman, chairman, A. G. A. Accounting Section, information flowed to the delegates at a pace surpassed only by the speed of electronic equipment. This was due to the efficient programming of the seminar by Russell W. Britt

of the Wisconsin Electric Power Company, and Emmet T. White of the Public Service Electric and Gas Co., who also presided as conference chairman over the general sessions.

The character of the seminar was one of informal group discussions. The delegates thorough questioning of the speakers and panel members, and their citing their own problems and experiences, helped to widen the scope of the discussions.

New developments in electronic equipment was the subject of the general session held Monday morning. A report was given on each of the ten major manufacturers of electronic equipment and on the numerous West Coast manufacturers of electronic equipment.



Use of IBM 650 for applications other than billing was subject of this panel. From 30 to 40 persons attended each panel, which were timed for ample discussion



Problems of personnel selection, training, organization were discussed by group above. Present personnel who knew company procedures were recommended

of most interest in these reports is the fact that two new giants of the electronic industry, General Electric, and Philco, have entered the computer field. General Electric is manufacturing the computer "Erma" for the Bank of America. Philco has in the design and development stage a computer that will not require any installation cost for air conditioning or special power requirements.

To quote G. A. Harbison, Philadelphia Gas Works, who gave the report on Philco's computer, "Just plug it in and play."

Application of large scale computers to customer accounting was the subject of the general session held Monday afternoon. Panel members for this session were men who have had the experience

of installing and operating electronic equipment or who are in the process of programming electronic equipment.

The panel members were J. Breen, W. E. Eggleston and H. E. Jacobson of the Commonwealth Edison Co.; F. J. Porter, Jr., Consolidated Edison Company of New York; J. D. Elliott, Detroit Edison Co.; and M. Salvino of The Peoples Gas Light and Coke Company.

Leading off the panel discussion, Mr. Porter stated three cardinal "don'ts" for the system men planning an application for a computer. (1) Don't underestimate the complexity of programming, it is harder than you think. (2) Don't underestimate the cost of programming, it is higher than you think. (3) Don't underestimate the time to get started, it is

longer than you think.

Mr. Porter warned against trying to accomplish too much. He recommended that the problem areas of small volume be deferred from the initial programming for the computer.

System design problems were described by Mr. Eggleston. "Customers are of first consideration in the system design," he said. "In applying customer accounting as the first application to large scale computers, we encounter greater danger in the hope of making greater saving."

In the discussion of system design Mr. Elliott stated, "The system design is the catalyst to eliminate records we think we must have." Mr. Salvino said, "Experience has shown that there are few errors



Utility accountants above opened seminar with detailed account of new developments in electronic accounting machines. Each of 11 men was responsible for reporting on the progress of an equipment manufacturer

in an electronic system, but each error is expensive to correct. Therefore, more stringent controls are necessary."

There is a great shortage of experienced help in the feasibility study area and programming area, Mr. Elliott said. This shortage of experienced help makes most difficult the job of evaluating the quality of people needed, the number of people needed, and the amount of training and retraining of people needed.

Training is a major project in preparing for the installation of a computer, he continued. Not only must we train programmers who will create the electronic system, but also of equal importance we must train people to operate the conversion procedures and retrain the people whose jobs are going to be eliminated.

"To date, enough is not known about what makes a good programmer to write a good job description," said Mr. Elliott. He suggested that programmers should be recruited from within the company. Employees who know the present operations in the area to be converted to the computer are desirable as programmers, he said, and recommended the use of IBM tests in selecting employees for training as programmers.

Group discussions

Tuesday was devoted to group discussions of the following subjects: (1) Manual to EDPM versus Manual to Punched Card to EDPM, (2) Feasibility Studies for Medium Size Equipment, (3) Feasibility Studies for Large Size Equipment, (4) Personnel Selection, Training, and Organization for Large and Medium Size Equipment, (5) IBM 650 Applications Other than Billing, (6) Elements of System Design for Medium Size Equipment, (7) Elements of System Design for Large Size Equipment, and (8) Clerical, Tabulating and Customer Inquiry Organization Surrounding Large Size Equipment.

Each subject was scheduled for a two-hour discussion period, thereby permitting each delegate to participate in four of the group discussions.

Group discussions were led by one or more of the following: L. Philipson and R. C. Young, Jr., American Gas and Electric Service Corp.; C. H. Carte, E. J. Jasper and W. J. Ott, The Cincinnati Gas and Electric Co.; D. C. Gillespie, W. H. Thumn, and J. E. Towle, Columbia Gas System Service Corp.; J. Breen, W. E. Eggleston, and H. E. Jacobson,

Commonwealth Edison Co.; J. T. Hydok and F. J. Porter, Jr., Consolidated Edison Company of New York; J. D. Elliott, E. D. Cowles, A. J. Gebauer, H. J. Stewart, and M. C. Vorpagel of The Detroit Edison Co.; M. Salvino, The Peoples Gas Light and Coke Co.; R. W. Britt, J. G. Cadby, and R. E. Skogg of the Wisconsin Electric Power Company.

Each group discussion was attended by 30 to 40 men and was presided over by four or five discussion leaders. The discussion leaders were plied with questions from the delegates and each discussion closed with many questions still to be asked. Some of the information and ideas given in these discussions are set forth below.

Each organization must make its own feasibility study. Studying the experience and programming of other organizations is of value, but it is unlikely that the programming of a system for one company can be used by another company.

Use of outside consultants for making the feasibility study or programming of the equipment is not recommended. Since electronic data processing machines are new, consultants have little experience to offer. The men who are going to operate the equipment should design the system, thus gaining valuable knowledge and experience.

The variety of equipment on the market complicates the decision of which equipment is best suited for your organization.

Be sure to see an engineering prototype of the equipment today before placing your order, for too much is invested in procedures to permit frequent changes in equipment.

Medium-size computers are confined to one area such as billing, collection, or pay roll. Large-size computers are used to make a system that crosses departmental lines.

Selection, training, and development of people who are going to design and operate the system is a major problem. The programmers should know present operations, therefore, present employees are the best source for recruiting programmers. People should also be selected from other departments and divisions of the organization to provide a programming staff with a broad knowledge of company operations.

Some of the qualities to look for when selecting people for training as programmers are: originality, imagination, courage, daring, perseverance, compatibility, and teamwork. Employees experienced in punched card tabulating equipment do not necessarily make good programmers. How good a man is on his present job does not indicate whether he will make a good programmer.

A programmer's time is spent as follows: 50 per cent system design, 25 per cent preparing block diagrams, ten per cent coding, and 15 per cent de-bugging.

Do not let the regular operating force decrease during the planning stage although, the feasibility study may have indicated that x number of people will be eliminated, for more people must be added for conversion before any work is eliminated. Don't sell the conversion job short.

During the conversion period, three systems are operated simultaneously: the present system, the conversion system, and the electronic data processing system.

Validity checks

Peripheral equipment is not as error-free as the computer. Validity checks can be programmed into the computer, thereby practically eliminating the possibility of an undetected error.

The possibilities of variations in system design are endless, therefore, it is necessary to freeze the system somewhere and resist further changes.

"Computers in Medium Size Companies and Application of a Large Scale Computer to General Accounting" was the subject of a general session Wednesday morning.

Don C. Frisbee, assistant treasurer, Pacific Power and Light Co., described his company's activities in ordering and preparing for the installation of a Datatron. The original feasibility study was made by Stanford University. The results of this study indicated that a computer was not economical for their operations, but the management of the Pacific Power and Light still wanted a computer.

A second feasibility study was made by employees of the company. This second study indicated that the break-even point would be five years from the date of conversion. On the basis of the second study a Datatron was ordered in January, 1956, for delivery in April, 1957.

Ten men were selected from within the company to form the programming staff. The men were selected on the basis of aptitude and personality tests. The ten men were given 12 weeks training in

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E. C. Baumann



Ira J. Rapson



R. H. Brandow



W. K. Paul



W. L. Brown



C. M. Turner

Head 1957 committees



S. E. McMurray

The appointment of chairmen of six standing committees and one subcommittee of the General Management Section has been announced by Leslie A. Brandt, section chairman.

E. C. Baumann, safety engineer, Public Service Electric & Gas Co., has been appointed chairman of the Accident Prevention Committee. This committee studies accident causes, prepares manuals and data sheets recommending corrective measures, and disseminates information helpful in reducing employee injuries, motor vehicle accidents, and public accidents.

Mr. Baumann, a graduate of St. John's College, Annapolis, began his career with Public Service in 1938 in commercial sales. He was transferred in 1941 to the safety department. He now holds the position of safety engineer of the gas department.

With the Accident Prevention Committee since 1944, Mr. Baumann has

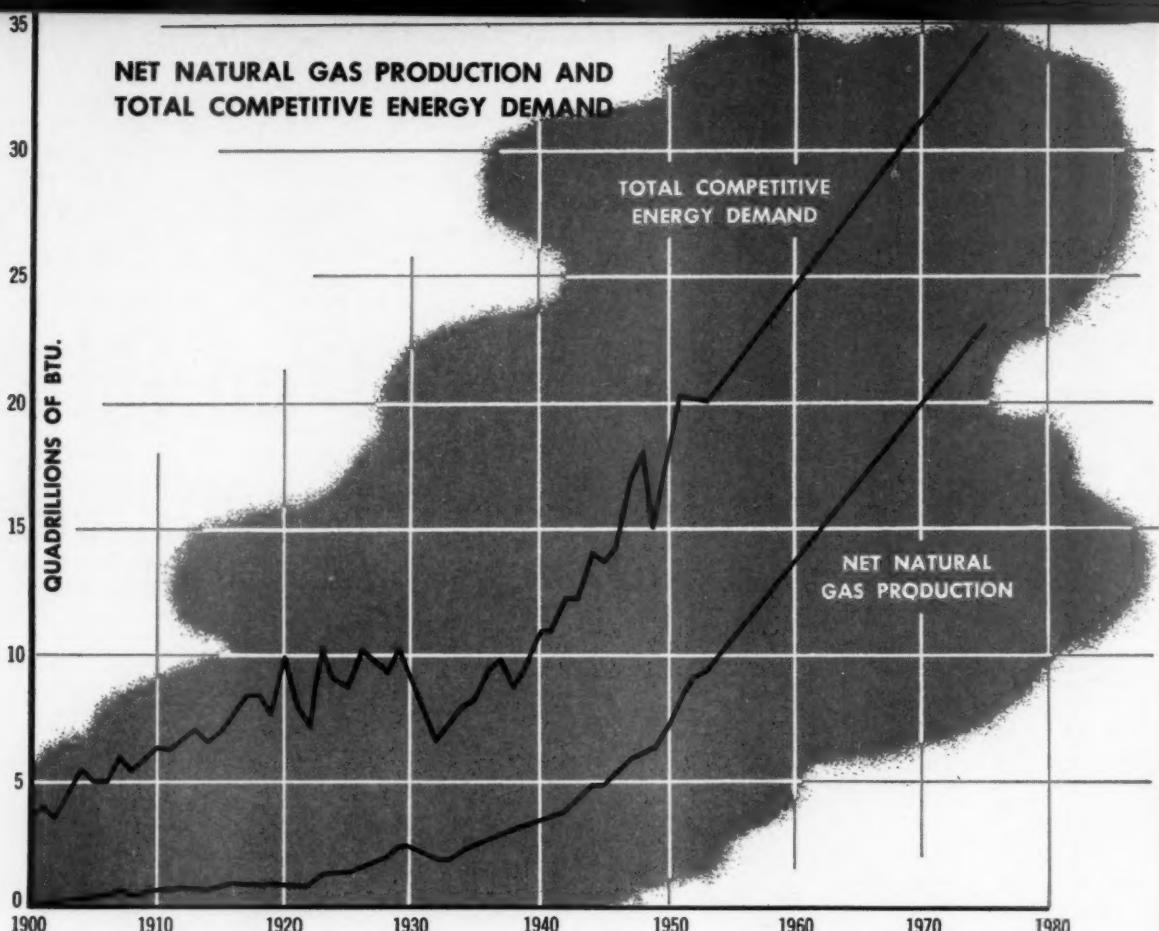
served with various subcommittees and has acted as instructor in the supervisory training course, "Accident Prevention through Informed Supervision." He also serves on numerous community activities in Newark and is active in church affairs. Married, with three daughters, his hobbies are historical novels and his family.

Ira J. Rapson, Detroit district sales manager, Michigan Consolidated Gas Co., has been appointed chairman of the Committee on Comparison of Competitive Services. This committee is the industry's watch-dog on competition from other fuels. It investigates the need for comparative tests of the performance of fuels when such data are essential and not available. An important function consists of assisting government authorities in setting up valid fuel selection factors to be used in deciding the choice of fuel in government projects.

Mr. Rapson, born and educated in Michigan, started with Michigan Consolidated in 1928 as a door to door salesman, and has progressed through all phases of utility sales, merchandise sales, commercial sales, dealer promotion, sales training, and space heating. He has also worked in the field of public relations and has held such supervisory positions as sales supervisor, superintendent of sales and assistant sales manager before assuming his present position.

R. H. Brandow, manager, insurance department, Stone & Webster Service Corp., has been appointed chairman of the Insurance Committee. The Insurance Committee reviews current developments in insurance. It studies possible methods of insurance cost reduction and acquaints the membership with such developments and possibilities. Implicit in its scope is a requirement

(Continued on page 26)



Gas and total energy demands in 1975

By BUREAU OF STATISTICS
American Gas Association

The consumption of increasing amounts of energy has been one of the outstanding characteristics of the industrialization of the United States, and has been largely responsible for higher productivity and improved living standards. It seems appropriate to examine the future demands of the economy for energy, the probable contribution to be made by natural gas, and the adequacy of future natural gas supplies.

This report presents a staff projection of the demand for energy in the U. S. in 1975, the projected use of natural gas in

that year under certain assumptions, and various statements of recognized authorities concerning the magnitude of probable ultimately recoverable natural gas reserves.

In projections of this nature, which relate to remote future periods, it is inevitable that significant differences will exist between the projections of different people. Accordingly, the reader's attention is also called to a paper delivered by W. B. Tippy, president of Commonwealth Services Inc., covering similar subject matter, delivered before the Chemical, Engineering and Manufactured Gas Production Conference in May, 1956.

For many years the Bureau of Mines has prepared data regarding total energy usage in the U. S. These can be related to population to develop an historical series portraying energy use per capita, and a "least squares" line can be developed to describe the relationship and to project such requirements into the future. Such a procedure indicates that energy use per capita may be expected to approximate 300 million Btu in 1975, compared with approximately 240 million at the present time. This is a simple rate of growth of approximately one and one quarter percent annually.

Utilizing Census Bureau population projections, including the assumption

that current fertility rates remain constant to 1975, total population by that year will be 228 million people. Multiplying this amount by the estimate of energy supply per capita indicates that total energy requirements by 1975 will be 68,600 trillion Btu compared with current consumption of approximately 40,000 trillion.

Putnam¹ projects population into the future and suggests that during the initial years the annual population increment will approximate two per cent, gradually declining until the population becomes stable by 2050. His conservative projection indicates a population in 1975 of 225 million. He then examines the rate of energy output per capita and per unit of real national income, and adjusts the output rates by assumed improvements in fuel efficiency and the relative use of different types of power (comfort heat, process heat, and work).

Although per capita energy output requirements have historically grown at an annual compound rate of 3.4 per cent, Putnam notes that the ratio of energy output per unit of real national income has become more steady toward the end of the period. This factor is largely responsible for his use of a two per cent annual increment in total energy requirements. Using this approach the annual needs of the U. S. will be 75,000 trillion Btu in 1975.

The Bureau of Mines has endorsed the estimate of 75,000 trillion Btu in 1975, while also reporting the Paley Commission² estimate of 69,000 trillion Btu.

A significant proportion of total energy requirements represents uses for which natural gas is not competitive. These include motor fuel; tractor fuel; the use of

distillate, residual oil and coal in vessels, railroads, by the armed forces, and by oil companies; the use of lubricating oils; asphalt consumption; and a variety of other less important items. Estimates were prepared of the total amounts of such non-competitive use for a period of years based on Bureau of Mines data, and total competitive consumption was derived by subtraction from total energy usage.

By the use of a "least squares" relationship between year and demands of the economy for fuel, for purposes where natural gas is competitive, projections for the future based upon previous trends were developed. As a check, demands for competitive uses per capita were trended, and the projected average usage for 1975 was multiplied by estimated population in that year. Averaging the results obtained from these procedures (the differences were minor) indicates the need of 35,400 trillion Btu for competitive purposes in 1975, compared with a current total of approximately 22,000 trillion Btu.

Based on another "least squares" trend line, using data for a period of years, the proportion of competitive fuel supply provided by natural gas was extrapolated into the future. At the present time, natural gas is providing approximately 46 per cent of energy requirements for competitive purposes; the equation indicates that this percentage will rise to 60 per cent by 1975 assuming the continuation of historical trends and adequacy of supplies (discussed later).

Thus, total demands for gas in 1975 will be 21,250 trillion Btu.

After adjustment for unavoidable transmission losses, probable waste on

producing properties, and liquids extraction, it is anticipated that net production in 1975 will have to approximate 22.5 trillion cubic feet (or 23,200 trillion Btu) to meet the demands of the economy for natural gas. This compares with an estimated 10.3 trillion cubic feet during 1955.

Thus natural gas will constitute about one third of the total energy usage (both competitive and non-competitive), compared with 26 per cent in 1955, and 13 per cent in 1945. Incidentally, this estimate of 22.5 trillion cubic feet is considered to be conservative; an alternative calculation, based on extrapolation of total energy demands of the economy rather than of only competitive energy demands, yields a 1975 estimate of 23.8 trillion cubic feet.

The Bureau of Mines supplies slightly conflicting estimates. On page 74 of Volume 2 of the *Report to the Joint Committee on Atomic Energy*³ they estimate energy usage of 20,000 trillion Btu from natural gas in 1975. Subsequently they indicate that the President's Materials Policy Commission² estimated that the 1975 demand for natural gas in the U. S. would be about 15 trillion cubic feet, and it now seems likely that the 1975 demand will be about 19 trillion cubic feet. It is our opinion that 22 trillion cubic feet is a realistic and workable projection.

It is, of course, unnecessary to point out that currently proved, economical (under today's cost and operating characteristics), recoverable (under current technological methods) reserves are 223.7 trillion cubic feet. No one doubts that much more will ultimately be recovered.

Estimates of ultimately recoverable re-

GAS CONSUMPTION IN RELATION TO TOTAL AND COMPETING ENERGY REQUIREMENTS AND SUPPLIES

	1900	1925	1955	1975
Total Energy Requirements (Trillions of Btu.)	7,900	21,900	40,000	68,600
Competitive Energy Requirements (Trillions of Btu.)	3,400	8,900	22,000	35,400
Net Natural Gas Production (Trillions of Btu.)	200	1,400	10,600	23,200
Net Natural Gas Production (Billions of cubic feet)	200	1,400	10,300	22,500
Natural Gas Reserves, December 31 (Billions of cubic feet)	1,000,000	982,100	850,000	517,200

serves are based either on the assumption that the total volume of marine sedimentary rocks in the U. S., or in the world, will yield petroleum and natural gas in amounts proportional to the yields obtained from the volume of rock thoroughly explored thus far, on the assumption that the current observed trends in the ratio of exploratory drilling to the discovery of oil will continue into the future. Considering the vast changes in events and technology over the past 100 years, it is not surprising to find that the estimates of total ultimate reserves show a continued upward trend, more or less paralleling the upward trend in drilling and in discoveries of proved reserves.

Pratt⁸ stated that probably the best guide is a projection into the future of the trends estimated by our past experience in the search for oil and gas. Only one to two per cent of the total area in the U. S. definitely tested by drilling has proved to be productive. In favorable sedimentary basins the average commercially productive area has been more than double this average.

Pratt concluded that if 1.5 per cent of the 577 million acres of the distinctly

favorable parts of the land area of the U. S. would ultimately prove to be productive, as may reasonably be expected on the basis of past experience, then 8.6 million acres should be oil productive if exploration is carried to completion.

The total productive area in the U. S. in 1948 was estimated to be 4.5 million acres for which ultimate recovery was estimated to be 57.2 billion barrels of oil. Pratt concluded that the ultimate oil resources of the land area, excluding the Continental Shelf of the U. S., are of the order of 100 billion barrels.

Our estimates of proved reserves of petroleum contemplate only the historical efficiency of recovery—an average of about 40 per cent of the oil in place. On this basis, 60 per cent of all the oil we have found over the life of the industry still remains in the ground. In the U. S., this unrecovered fraction already exceeds 160 billion barrels, and it grows larger with each new discovery. The industry is confident that technological improvements in recovery practice, on which many research projects are already engaged, will eventually bring to the surface tens of billions of barrels of this

formerly unrecoverable oil, thus further increasing the proved reserves.

In 1947, L. G. Weeks⁸ estimated that the ultimate petroleum reserves in the U. S., exclusive of the Continental Shelves, would total 110 billion barrels. This estimate is now realized to be low. Past production plus present proved reserves already total 85 billion barrels. It seems obvious that anticipated intensive exploration over the next 20 years will yield new reserves in excess of the 25 billion barrels required to satisfy the Weeks estimate.

In 1952, P. R. Schultz⁹ concluded that that ultimate reserves of oil in the land area of the U. S. would be at least 170 billion barrels, and that the ultimate reserves of the Continental Shelves would be 30 billion barrels. In 1955, Paul D. Torrey¹⁰ estimated that the existing fields in the U. S. contained an additional 11 billion barrels recoverable by fluid injection methods under recent economic conditions, and that still larger quantities were potentially recoverable.

Considering that trends in production and discovery are still headed upward,

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Meet your Association staff



Julia Blash

The amiable voice on Extension 128 answering your rate queries—from how much gas costs in the Philippines to whether your gas range will work in Illinois—belongs to Julia Blash, editor of the A. G. A. Rate Service. Miss Blash has at her fingertips information on rates and types of gas used in every area of the country at any time since 1923.

The gas rate information service, the only one of its kind, is under the direction of the Bureau of Statistics and the sponsorship of the Rate Committee. Subscribers to the service receive a loose-leaf rate book, then are kept up-to-date by the constant supplementary revisions emanating from Miss Blash's office.

Over 450 groups from the U.S., Japan, Mexico, Canada, Austria and Italy now subscribe to the service. American subscribers include gas utilities and manufacturers, public service commissions, libraries, the Post Office Department, Army, Navy, and Air Force.

Miss Blash started in her position in

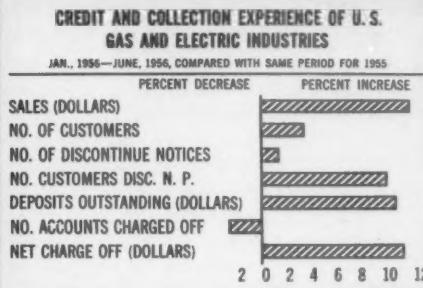
1932, at the time when "Services Offered" columns far outnumbered "Positions Open" in the A. G. A. MONTHLY and everywhere else. Since that time, the A. G. A. Rate Service has grown right along with the gas industry, and now Miss Blash has an assistant, Gen Ziembicka, who prepares new data for publication.

Miss Blash will celebrate her twenty-fifth anniversary with A. G. A. on February 28.

Manhattan-born, Miss Blash has lived in the borough all her life. Although formerly active in sports—such as golf, tennis, skating, and swimming—she now centers her spare time around her Tudor City apartment—decorating, watching television, playing cards, and sewing. Sewing is her forte—she designs and makes all her clothes.

For the new year, Miss Blash has only one resolution—to give up smoking. It's not a new one—she's been making it since before she joined A. G. A. "But," she firmly states, "I plan to keep it this year."

Sales trend still upward nationally



The Credit Picture for the first half of 1956 compared to the same period of 1955 continued, in most instances, to present an encouraging note when viewed nationwide.

The upward trend in total sales continued at an almost identical level as in previous comparable periods although in some areas, residential sales increased percentagewise above other revenue classifications. One section of the country doubled its 1955 growth

in the category.

The upward trend was again evident in the number of customers on a national basis although again at a somewhat reduced rate, 3.3 per cent and 3.0 per cent in residential and total customers respectively in 1956 as compared to 3.4 per cent and 3.7 per cent in the same six months of 1955. Two areas were consistent with their own past experiences in that their increases in both residential and total customer

growth were well below the other areas while three continued their growth at the national average level.

The other four areas as in 1955 indicated much more rapid growth, one as much as 62 per cent above the average of all areas in residential customers and 50 per cent in total customers.

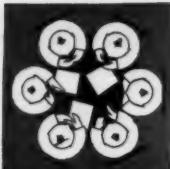
In one field, we find that the trend exhibited for the previous six months' analysis has been reversed. From a de-

(Continued on page 44)

REFLECTION OF CREDIT AND COLLECTION EXPERIENCE OF U. S. ELECTRIC AND GAS UTILITIES—JAN. 1, 1956, TO JUNE 30, 1956

Per Cent—Increase or Decrease over Corresponding Period—1955

	NEW ENGLAND	MID ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN STATES	PACIFIC STATES	UNITED STATES TOTAL
SALES IN DOLLARS:										
Residential	+10.3	+11.6	+17.5	+15.7	+16.2	+13.5	+10.3	+6.9	+26.0	+16.1
Total	+10.9	+9.1	+13.9	+12.1	+14.1	+10.2	+10.1	+10.0	+8.7	+11.3
NO. OF CUSTOMERS:										
Residential	+ 1.4	+ 1.2	+ 3.1	+ 3.3	+ 5.5	+ 5.6	+ 3.9	+ 5.7	+ 4.9	+ 3.3
Total	+ 1.2	+ 1.0	+ 2.9	+ 3.1	+ 5.1	+ 4.6	+ 3.4	+ 5.5	+ 4.6	+ 3.0
NO. OF DISCONNECT NOTICES										
	-13.3	- 8.9	+ 5.6	+17.0	+13.1	+ 0.2	- 3.9	+51.8	- 3.2	+ 1.0
NO. OF NON-PAYMENT DISCONNECTIONS										
	-11.7	+ 8.5	+20.6	+ 1.1	+10.5	- 2.5	- 1.5	+64.9	+ 9.3	+ 9.3
SECURITY DEPOSITS OUTSTANDING										
Number	- 0.8	+11.6	+14.1	+17.3	+11.6	- 0.8	- 0.9	+11.4	- 0.2	+ 8.1
Amount (Dollars)	+ 4.3	+ 9.8	+21.2	+10.3	+12.5	+ 3.1	+ 0.6	+ 6.7	+26.5	+10.0
NO. OF ACCOUNTS CHARGED-OFF										
	+24.8	+ 1.1	+ 5.3	+ 2.2	- 1.8	+15.9	- 1.0	+19.5	-21.4	- 2.5
NET CHARGE-OFF (Dollars)										
	+34.4	+16.5	+ 7.9	+15.6	-10.1	+16.8	- 5.3	+48.3	+13.6	+10.8
NET CHARGE-OFF—(Cents per Customer)										
	+32.9	+18.2	+ 4.5	+12.8	-14.7	+12.1	- 8.2	+40.0	+ 8.7	+ 8.3
RATIO: NET CHARGE-OFF TO SALES										
Residential	+25.8	+ 6.8	- 8.1	- 0.1	-22.6	+ 4.8	-14.1	+38.7	- 9.8	- 4.1
Total	+21.2	+ 9.2	- 5.2	+ 3.2	-21.2	+ 9.7	-14.0	+35.8	+ 4.5	+ 0.1



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons

Assistant to the Personnel Manager
Philadelphia Electric Company

● Be boss of your desk—Keep your desk clear of the paperwork tangle. And the rewards will be great. A clean desk improves your frame of mind. It makes the task at hand look easier and it boosts your operating efficiency.

But don't fool yourself. Just reading this article will not clear your desk. Generally, three kinds of paperwork are likely to pile up on your desk:

... *Operating data.* Correspondence, purchase requisitions for signature, personnel records and data, cost and operating reports. You need these to run your department and to keep informed about your own operations.

... *General reading material.* Publications, catalogues, magazines, technical papers, books, pamphlets. These are the things you want to read in the hope of learning as much as you think you should know.

... *Extraneous matter.* Should not be on your desk in the first place. It's the correspondence you have asked to have routed to your desk but have not found useful—catalogues and other literature you no longer find helpful—reports that overlap and duplicate others.

If these three kinds of paper are cluttering up your desk, you will want to whittle them down to a realistic working level. To guide you, Robert B. Wilson, assistant vice-president, Wallace Clark & Co., Inc., New York, writes in the September, 1956 issue of *Factory Magazine* concerning this subject.

● *Supervisors' training package free*—Are you stymied because your supervisors lack initiative? One shiny new supervisory training program includes two sound motion pictures (one in color), five film clips, four handsome booklets, and a complete-to-the-last-detail conference leader's guide. If interested about this free information, write The Mutual Benefit Life Insurance Co., Newark, N. J.

H. Bruce Palmer, Mutual's president says, "We think this program fills a needed service. It plugs a gap in most supervisory improvement programs—aid in financial planning. But, from our own selfish viewpoint, we hope this presentation is so good it will provide our agents with potential insurance contacts."

That's a straightforward answer. So let us look at the program for a moment. It has ten units designed to be presented in one-hour conferences—although there is a lot of leeway for changing the sequence to fit your needs. Actually the program breaks down into:

... *Motivation.* Mutual surveyed 500 companies, found lack of initiative ranked as management's biggest problem. So the first big piece of the program is a 20-min. motion picture film, "The Time Is Now." Using a very human approach, it shows how a supervisor discovers that his true security comes more from what he is than from what he has. That his inner assets are his source of strength for meeting crises or taking advantage of opportunities.

... *Species.* Five short clips lifted from the main film serve as springboards for separate conferences on integrity, planning, initiative, craftsmanship, and teamwork. Three excellent trainee booklets form the nuclei for additional sessions on communications, strengthening management skills, and developing subordinates.

... *Financial planning.* Over half the companies in Mutual's survey said they had a need for financial planning in their management development programs. They felt such instruction would make executives more confident in business planning, remove distractions caused by money worries, and make them better candidates for advancement. This section of the course, a 20-min. animated cartoon, deals objectively with all the ways a man can plan his investments—banks, stock, bonds, real estate, and insurance.

Let us see what strings are attached:

Neither you nor your supervisors have to buy insurance from Mutual to get this free program. Mutual does not sell any group insurance.

A Mutual sales agent will appear on your property only at your invitation—and then only to present one of the ten units in the course (financial planning).

The agent will not try to sell insurance to you or your supervisors in your plant.

What is the cost? Nothing for the package. But you will have to supply your own conference facilities and leader. And if you want to distribute any of the three booklets to participants, you will buy these at cost (less than 50¢ each).

You do not have to use the entire package. You use only those units that suit your needs.

● *Book of the month—"Influencing Employee Behavior"*—Relations with employees are, perhaps, the most important single responsibility of a supervisor. And this book describes the methods for presenting suggestions, recommendations, instructions, and directions to individuals and/or groups in order to get a favorable response. Ways of lessening employee resistance and opposition are described. Interesting feature is the role playing that is included to give the reader practice in handling every-day situations. The major emphasis throughout the book is on influencing behavior through improved and more effective interviews. Probably deserves a place on the shelf of most supervisors. By R. P. Calhoon and C. A. Kirkpatrick. Mc-

Gray-Hill Book Co., 330 W. 42nd St., New York 36. 312 pages. \$4.

● *Films of the month—"Work Simplification on Film"* is a 12-page folder listing 38 16mm films (length: 10 to 15 min. each) on the use of work simplification in industry. These films, produced by leading U.S. industrial companies, are all recipients of awards in the annual Methods Improvements Competition sponsored by the Industrial Management Society. They are available on a rental basis from the Society. For a free copy of the brochure, write: Industrial Management Society, 35 E. Wacker Drive, Chicago, 1.

"Retire to Life" tells the story of a machinist who approaches retirement with the wrong attitude—looking forward to it as a time for loafing and fishing. He soon feels useless and unwanted. Shows how he seeks—and finds—a more positive approach to life at this period. 16mm, sound, black and white, 20 min. Available for rent (\$5) from: National Association for Mental Health, 13 E. 37th St., New York 16.

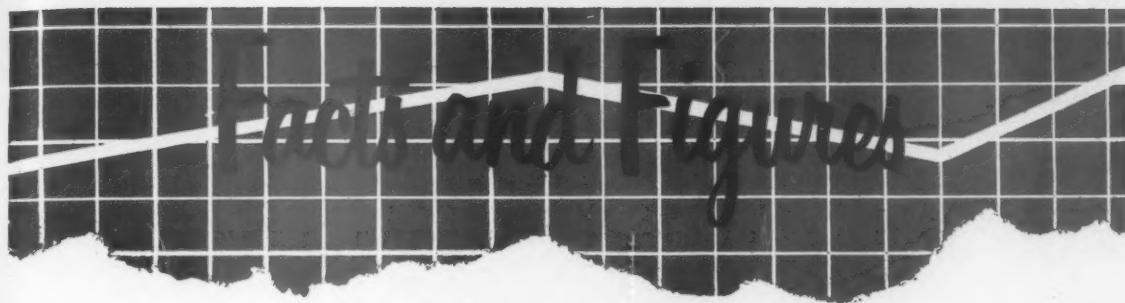
● *Court decisions—Counting rest periods as time worked*—The Wage-Hour law requires an employer to count two 15-minute rest periods as time worked if they increase productivity to the benefit of the employer and are too short for the employees to follow personal pursuits, according to the 10th CA (Mitchell v. Greinetz, 56 ALC 1160).

Employer lawfully withholds wage information—Whether an employer has an unqualified obligation to furnish a union with complete payroll information is once again a live issue, thanks to a recent decision by the 9th CA. The mere fact that a union wants such information is insufficient to make a denial of the information unlawful, according to the court. It held that an employer was not guilty of an unfair labor practice in refusing a union's request for wage data, when there was no showing of a reasonable need for the information (NLRB v. F. W. Woolworth Co., 56 ALC 1050). The court's action directly reverses the NLRB's holding in the case, and apparently conflicts with decisions by several other courts of appeals.

The background: An employer and a union had a contract which established minimum wage rates for employees and provided that further adjustment of the rates could be made by mutual agreement between the parties. It also contained a management prerogative clause which gave the employer control over bonus or incentive pay schedules.

Shortly after the contract was executed, and again months later when negotiations had begun under the wage adjustment clause, the union demanded that it be furnished with the name, hours and wages of each employee. This request was repeated after the wage adjustments had been successfully con-

(Continued on page 48)



Prepared by A.G.A. Bureau of Statistics

Gas utility and pipeline construction expenditures during the third quarter of 1956 totaled \$404 million, down 6.0 per cent from the \$430 million spent in the same quarter a year ago but up 5.5 per cent over second quarter 1956 expenditures. Total estimated construction expenditures for 1956 are \$1,508 million, down somewhat from the \$1,628 million forecasted during the early part of the year. Accounting primarily for this decline was the steel strike which occurred during June of 1956. Steel pipe supplies which are so vital to our industry are now in short supply and therefore hampering the construction activity of the gas industry.

Total operating revenues of the gas utility and pipeline industry (including both pipeline sales for resale and distribution company sales to ultimate consumers) reached a total of \$5,858 million for the 12-month period ending September 30, 1956. This is a gain of \$818 million, or 16.2 per cent over the figure for the comparable period one year earlier. Net operating revenues increased from \$649 million to \$762 million in the same period, a gain of 17.4 per cent. Net income during the cumulative period was \$601 million, an increase of 25.7 per cent over the \$478 million for the similar period one year earlier.

Total tax accruals for the 12-month period ending September 30, 1956 were \$790 million or 13.5 per cent of the revenues received by the gas industry. Taxes continue to represent a greater portion of total operating revenues than the net income which is available to the stockholders and for future expansion. (Tabulation of gas industry income figures appears on page 29.)

Gas appliance shipments continue to reflect the downturn experienced in new home construction. Housing starts during October of 93,000 units were down 12.1

(Continued on page 29)

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING NOVEMBER 1956

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	November 1956		October 1956		Ten Months Ending October 31, 1956	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES						
Gas	141,700p	-23.2	202,900r	-3.5	1,740,000	-9.8
Electric	n.a.	n.a.	87,100	-22.2	1,072,700	-8.8
WATER HEATERS						
Gas	194,700p	-0.4	230,900r	-0.1	2,427,100	+2.5
Electric	n.a.	n.a.	69,300	0.0	732,200	-7.7
GAS HEATING						
Furnaces	55,100p	-28.8	79,700p	-15.6	755,400	-3.5
Boilers	7,800p	-2.5	13,500r	-0.7	91,700	+7.8
Conversion Burners	11,900p	-40.8	25,300r	-41.2	181,400	-9.3
DRYERS						
Gas	n.a.	n.a.	59,700	+32.4	345,200	+25.2
Electric	n.a.	n.a.	147,300	+20.9	923,000	+16.9

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING OCTOBER 1956

(MILLIONS OF THERMS)

	1956	1955	Per Cent Change
Month of October			
All types of Gas	5,229.3	4,693.8	+11.4
Natural Gas	5,070.2	4,478.2	+13.2
Other Gases	159.1	215.6	-26.2
Twelve Months Ending October 31			
All types of Gas	71,832.7	65,745.8	+9.3
Natural Gas	68,327.1	62,288.8	+9.7
Other Gases	3,505.6	3,457.0	+1.4
October Index of Monthly Utility Gas Sales (1947-49 = 100)	220.2	197.7	+11.4

PERTINENT BUSINESS INDICATORS, OCTOBER

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	October		September		Per Cent Change	
	1956	1955	1956	1955		
Industrial activity (1947-49 = 100)	145p	143	+ 1.4	145r	142	+ 2.1
Consumer prices (1947-49 = 100)	117.7	114.9	+ 2.4	117.1	114.9	+ 1.9
Housing starts, Non-farm (thousands)	93.0	105.8	-12.1	93.0	114.9	-19.1
New private construction expenditures (\$ million)	2,751	2,810	-2.1	2,833r	2,879	-1.6
Construction costs (1947-49 = 100)	155.4	148.6	+ 4.6	155.4	148.8	+ 4.4

n.a. Not Available.

p. Preliminary.

r. Revised.

*Section places emphasis on customer
and employee relations programs for forthcoming year*

Organize 1957 accounting activities

W. D. SWEETMAN, CHAIRMAN • D. W. PETERSON, VICE-CHAIRMAN

A positive program emphasizing customer relations and employee relations was the challenge given to the members of the Accounting Section by Chairman W. D. Sweetman, The Peoples Gas Light and Coke Co., at the organization meeting held in Chicago in September. Mr. Sweetman is being assisted by D. W. Peterson, Minneapolis Gas Co., vice-chairman and T. J. Shanley, A. G. A. Accounting Section secretary.

Mr. Sweetman charged each Section member, whether he be a coordinator, chairman, vice-chairman, or committee-man, with the responsibility of putting forth his best efforts towards maintaining the high standards of work that have been so much a part of the Accounting Section.

Reports made by the chairmen of the Standing Committees at the close of the organization meeting indicate that an interesting and worthwhile program will be developed for the National Conference of Gas and Electric Utility Accountants to be held April 8-10, 1957 at the Sheraton Park Hotel in Washington, D. C.

As in the previous year, each of the Standing Committees has appointed a liaison member to cooperate with the Electronic Accounting Machine Developments Service Committee in order that full information regarding developments by each of the many electronic accounting machine manufacturers may be immediately made available to the Standing Committee members.

In addition to the formal committee work, articles of timely interest are being prepared by each committee for publication in the A. G. A. *MONTHLY* or for



W. D. SWEETMAN (l.), chairman of Accounting Section, has served as Section vice-chairman; coordinator, General Activities Group; chairman, Accounting Employee Relations Committee; and member of Customer Accounting Committee and Employee Relations Committee. He is superintendent, customer accounting, Peoples Gas Light & Coke



D. W. PETERSON (r.), vice-chairman of Accounting Section, has served as coordinator, General Activities Group; chairman, General Accounting Committee; chairman, Accounting Developments Service Subcommittee. He is secretary-treasurer, Minneapolis Gas

presentation at the A. G. A. Annual Convention.

The Accounting Employee Relations Committee is under the direction of T. J. Blake, The Peoples Gas Light and Coke Co., as chairman, and L. G. Brailey, The East Ohio Gas Co., as vice-chairman. The committee joins with the other committees in contributing to the 1957 Accounting Conference general theme of relations by emphasizing the importance of employee relations.

Following the pattern which in the past has proved so successful in providing general interest and obtaining audience participation, the committee has scheduled two sessions at the Spring Accounting Conference. One session will discuss

the problems arising in connection with long-service employees whose jobs have been eliminated through technological or other changes; and the principles involved in providing the proper atmosphere for supervisors to function fully. Another topic is the difficulties inherent in a situation which exists when recently employed college graduates are promoted over loyal long-service employees who lack the same educational background; and a significant discussion on the problems present in unionized accounting offices.

Another session will consist of a panel discussion on questions posed by the audience. The committee feels that human factors in accounting offices are of prime

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consideration and that the subjects planned for presentation are timely and of substantial benefit.

The committee also is collaborating with the Customer Accounting, Customer Relations and Customer Collections Committees in a joint study of shift operations.

James F. Daly, Long Island Lighting Co., coordinator, is charged with the responsibility for the general direction of the work of the General Accounting Activities Group of standing committees. As coordinator, he maintains close communication and contact with the standing committees to avoid overlapping of projects and assure complete handling of all subjects under study.

The General Accounting Committee, which is under the chairmanship of C. F. Mills, Philadelphia Electric Co., has selected for study the accounting aspects of accelerated depreciation, the pinpointing of responsibility for deviations from operating budgets, the accounting department's service function in the field, responsibility accounting, and the form, frequency and use of statements of source and disposition of funds.

In addition, projects have been selected covering certain phases of methods and procedure work, applications for electronic accounting machines, establishment of cost standards or work measurement units, inventory control, yardsticks for measuring reasonableness of operating budgets and a project which will cover certain problems in connection with handling and reporting of overheads.

Continuing projects include a study of annual reports and a survey of new accounting developments affecting utilities. As in the prior year, liaison will be maintained with the Electronic Accounting Machine Developments Committee through an appointed representative.

The above projects were selected by a Screening Committee, which met in June, on the basis of those subjects which appeared to have the widest interest and most general appeal. The selections of the Screening Committee were approved at the organization meeting.

Tentative project committee assignments were also made in advance of the organization meeting, based upon circularizing the membership of the committee as to their individual preference for such assignment. It is felt that these preliminary steps saved a substantial amount of time and enabled all projects to be started much earlier than in previous

years.

W. G. Pilgrim, The Peoples Gas Light and Coke Co., heads the Depreciation Accounting Committee. Because of the large number of decisions that are handed down each year relating to depreciation accruals and accumulated reserves, there is a continuing project committee which compiles and explains the important Commission decisions. Another continuing study is the committee's report on "Accelerated Depreciation for Tax Purposes."

"Methods of Accrual and Reserve Computation" will be concerned with setting forth the various methods of calculating the annual accrual and of determining the amount and extent of the theoretical reserve. An explanation in non-technical terms will be included for the guidance of those who may not be fully versed in the technical mathematical terminology and processes. Other projects to be developed will be "Net Salvage," "Application of High Speed Electronic Computing Machines for Depreciation Calculation" and "Atomic Energy Plant Life."

The use of accelerated (liberalized) depreciation permitted for federal income tax purposes and concurrently, the rules and decisions of regulatory authorities relating to such methods has in some areas been coupled with the idea that it is a source of funds that carries no interest or dividend requirements. The future application of the amount resulting from such deferral in rate base, cost of money and rate of return can have a very marked effect on the income of utility companies. As such it would have a very definite economic result; also there may be some aspects of economic results, generally, in future taxes. The committee will attempt to explore such areas under the project, "Economic Aspects of Accelerated Depreciation."

The Plant Accounting and Property Records Committee, under the chairmanship of Rudy H. Miller, Northern Natural Gas Co., is well on its way in developing its program for the year. Since depreciation problems are continually of utmost importance to the industry, the committee will present papers covering "Plant Records for Declining Balance Tax Depreciation" and "Plant Records for Sum of the Years Digits Tax Depreciation."

"How We Do It" papers will be presented at the committee's luncheon meeting at the Spring Accounting Conference.



AUSTIN W. MERCHANT, coordinator, Customer Activities Group, has been associated with the Michigan Consolidated Gas Co., Detroit, since 1929. He is now superintendent of the accounting department



CLAUDE F. WAHLI, chairman of Customer Accounting Committee, has been active on this committee for six years. He has been employed by Knoxville Utilities Board and its predecessor company for about 23 years



F. T. HAGER, chairman, Customer Collections Committee, started with the Philadelphia Gas Works, a division of The UGI Company, in 1925. At present he manages collection and meter reading



J. L. NEILSON, new chairman of the Customer Relations Committee, has been in the utility field since 1947. He is now the manager of the customer service section of the Brooklyn Union



JAMES F. DALY, coordinator, General Activities Group, is assistant controller of Long Island Lighting Company, Mineola, N. Y., and assistant treasurer of the American Gas Association

W. G. PILGRIM, the chairman of the Depreciation Accounting Committee, has been at Peoples Gas Light & Coke 25 years, is statistical accounting superintendent



C. F. MILLS, chairman, General Accounting Committee, has been manager of the general accounting division of the Philadelphia Electric Company for seven years



H. G. LOCHBAUM, chairman of the Internal Auditing Committee, is the assistant supervisor in the internal auditing department of the Consolidated Natural Gas system



RUDY H. MILLER, chairman, Plant Accounting Committee, has been at Northern Natural Gas Company since 1931, is now chief accountant of the utility's property records department



J. R. WEGER, chairman, Taxation Accounting committee, has been supervisor of the tax accounting department of Baltimore (Md.) Gas and Electric Company for more than 15 years



T. J. BLAKE, new chairman of the Accounting Employee Relations Committee, is assistant general storekeeper at Peoples Gas Light & Coke. He joined the gas utility in 1928



"Accounting for Utility Plant in Whole Dollars" and "Accounting for Bonded Property" should provide the basis for lively discussion from the floor. Material is also being prepared for presentation in a panel session.

Other papers to be developed are "Machine Accounting Application to Property Record Problems" and "Group Charging of Minor Materials to Mass Property Accounts."

The Taxation Accounting Committee is under the chairmanship of J. R. Weger, Baltimore Gas and Electric Co., with H. S. Howard, Niagara Mohawk Power Corp., as vice-chairman. The committee will continue its study of industry problems arising under the Internal Revenue Code of 1954 and the related regulations, some of which have not as yet been issued and others which are still in the so-called proposed form.

During the coming year, it is expected that much of the work of this committee will be conducted on a panel or round-table discussion basis and that only a limited number of formal papers will be presented.

The Subcommittee to Study Proposed and Introduced Federal Tax Legislation and Regulations will continue its essential duty of reviewing proposed regulations and amendments to the Internal Revenue Code and preparing recommendations deemed necessary.

The Internal Auditing Committee is headed by Herb Lochbaum of Consolidated Natural Gas Co., and will include as part of its program for the year the periodic release of case studies based upon actual experience of internal auditors. Requests have been received for these releases from utility companies throughout the U. S., as well as from some foreign countries.

Another subcommittee project attracting considerable interest, particularly among the member companies, is the study of "Measuring and Comparing Internal Audit Performance." At this point of the study, it appears that a reasonable amount of internal auditing performance can be compared. Upon completion, it is believed the internal auditor will be in a better position to determine whether he is performing adequate internal auditing, by comparing the standards of other companies to his own.

A subcommittee project has been undertaken in order that the internal auditors may keep pace with the development of electronic accounting machines

and so that they maintain proper liaison with the Electronic Accounting Machine Developments Committee.

The committee's activities will also include the continuance of a long-term project of developing audit manuals for the utility industry use. This year the new manuals to be developed, in addition to those already completed and in progress, are "Audit of Real Estate and Rights-of-Way," "Audit of Personnel Department Records," "Audit of Claims," and "Audit of Telephone Charges and Service Billing."

Plans are also underway for an interesting and productive program for the Spring Conference.

Austin W. Merchant, Michigan Consolidated Gas Co., is coordinator of the Customer Accounting Activities Group of standing committees. The collaboration of the standing committees in undertaking a joint study of shift operations in the customer accounting department is a wonderful example of the unity and cooperation among the committees.

The Customer Collections Committee under the chairmanship of Frank T. Hager, Philadelphia Gas Works, has five projects under consideration. The project, "Should Utility Collection Policies Be Geared to the Present Lenient Retail Credit Policies?" will attempt to trace the changes in customers' paying habits over the past five or six years attributable to lenient collection policies on installment sales of hard goods.

The "Credit Picture" is a continuing long term project and, starting this year, the report will be on a twelve-month basis rather than the usual six.

A "Study of Trends in Utility Deposits Policies" will provide the background for an interesting discussion from the floor at one of the committee's meetings at the Spring Accounting Conference.

"The Best Use of Field Representatives or Collectors" will relate the experiences of companies who have discontinued collectors as such, and will develop a basic philosophy of this subject.

In keeping with the general theme, customer and employee relations, the committee is planning a joint project with the Customer Relations, Employee Relations and Customer Accounting committees.

The committee has also made plans for a luncheon meeting at the Spring Conference when an outstanding speaker will talk on current credit problems.

Claude F. Wahli, Knoxville Utilities

Chairmen of A.G.A. Accounting Section special committees



Emmet White
Steering Committee
Electronics Research
Electronics Accounting
Machine Development



A. J. Klemmer
Accounting
Developments
Service



Emanuel Toder
Application of
Accounting Principles



James A. Laing
Accounting Section
Compendium



Ernest J. Howe
Uniform System
of Accounts

Board, heads the Customer Accounting Committee. A number of interesting studies concerned with employee relations are in the mill. One project will cover the problems encountered in the indoctrination of present employees in the use of punched card equipment. "Shift Operations" will study the development, effect and trend toward extra clerical staff operations in customer accounting work occasioned by the shortage of available clerical help and the introduction of electronic equipment.

"Comparison of Manual and Mechanical Methods for the Preparation of Final Bills" will provide complete procedures of several methods now in use and will emphasize special points which will be of interest to all. A study of what can be done to reduce meter reading expense in rural and suburban areas and a paper, "Application of Punched Cards to Meter Order Routines," should be enthusiastically received.

The committee also plans to undertake the following projects: "Merchandise Billing Procedures," "Survey of Operating Standards and Records for IBM Equipment," "Machine Methods Used to Determine New Accounts, Balances, and Practices Followed to Select Accounts for Collection Treatment" and "Standardizing for Cost Comparisons."

A revision and updating of the original Customer Accounting Directory issued five years ago will be undertaken by the committee. The new directory will provide current information as to methods and accounting equipment used by each of the member companies.

The Customer Relations Committee under the chairmanship of John L. Neilson, Brooklyn Union Gas Co., has selected a comprehensive list of projects

that should provide an interesting program for the Spring Conference. Effective communication of a company's customer relations policy will be the subject of a project entitled "Let the Last Man Know." One group will report on the problems of meeting our service responsibilities to new customers in rapidly expanding areas.

"Are We Giving Our Customers the Run Around?" will endeavor to determine whether personal customer contacts can best be handled on a centralized basis or by specialized employees handling specific types of inquiries.

A detailed study will be made of current "Telephone Standards and Practices" of member companies with emphasis on the use of intercommunication systems, telephone holding boards and the use of recording equipment. Other reports will concern themselves with "Customer Service Reports and Records," and "New Angles and Improved Techniques for Handling Customer Inquiries."

The committee will also continue its work on a catalogue of company policies.

The Electronics Accounting Machine Developments Committee continues to attract much interest and attention. Under the chairmanship of Emmet White, Public Service Electric and Gas Co., this committee studies and brings to the attention of the entire industry, through its issues of *Tubes and Tapes*, the latest developments as to progress made by member companies as well as complete information available on the newest equipment. The committee also sponsors the Electronics Seminars such as the one held in Cincinnati in December and plans to make a complete report at the Spring Accounting Conference.

Emmet White also heads up the steering committee for Electronics Research Project—Harvard University, which is the means of communication between the industry and Dr. Howard Aiken's research team.

Management is vitally concerned with the work of the Committee on Uniform System of Accounts under the competent leadership of Ernest J. Howe, Rochester Gas and Electric Corporation.

Emanuel Toder, Consolidated Edison Company of New York, Inc., again heads up the Committee on Application of Accounting Principles. This committee follows current developments in accounting principles and practices, studies their impact upon the gas industry and through releases of reports on such studies promotes better understanding of current developments and points up their effect upon the utilities industry.

The task of preparing an up-to-date manual of all articles published or presented by the Accounting Section falls on the shoulders of the Compendium Committee. James A. Laing, Natural Gas Pipeline Company of America, is chairman of this important committee. This year the Compendium Committee is cooperating with a similar EEI committee and will issue a joint compendium report covering all articles and papers developed over the last ten years.

The Accounting Developments Service Committee disseminates information to the entire industry regarding the latest office equipment available as well as new or recent procedural developments, techniques or "wrinkles" which will be of help in the handling of accounting problems. A. J. Klemmer, Rochester Gas and Electric Corp., is the chairman of this committee.

LP-Gas

(Continued from page 10)

rail rate increases again threaten to burden the industry further.

The industry started action to obtain approval of an uninsulated tank car for the transportation of LP-Gas. 1956 saw considerable interest being expressed in water transportation of refrigerated LP-Gas.

Outlook: The 1956 sales broke all records. The increase alone almost equals total sales for 1944 and the total

exceeds all that sold during the first 25 years of the industry. Competition for the consumers' energy requirements continues very keen and the LP-Gas industry must be ever alert if it is to continue such record breaking progress.

The market is far from saturated. "Weather" conditioning (both heating and cooling), motor fuel and other new applications offer excellent opportunities for the LP-Gas distributor. The Federal highway program offers many opportunities for new and expanded

motor fuel applications, trucks, earth movers, graders, road rollers, tractors, etc. Chemical use should continue its amazing growth of the past few years.

LP-Gas distributors are finding it to their advantage and, in fact, necessary to make use of the best accounting practices and most modern business management methods. Evidence of this is shown in the number of and participation in business management and training programs.

The industry should experience another excellent growth year in 1957.

1957 committees

(Continued from page 15)

to disseminate information and procedures aimed at informing and educating the industry's insurance buyers.

Mr. Brandow is a native of Ohio, where he attended Ohio State University and Cleveland Law School. He has worked in the insurance field for both insurance and industry companies for his entire business life. Employed for nine years at Stone and Webster, he has gained wide experience in the insurance problems of the utility industry.

Walter K. Paul, manager of public relations, Northern Indiana Public Service Co., has been appointed chairman of the Personnel Committee. This committee studies and reports on employee relations matters in the gas industry. Within its scope are such vexing problems as recruitment of engineers and other technically trained personnel, employee attitudes, fringe benefits, absenteeism due to illness and contract negotiations.

Mr. Paul began his career with NIPSCO in 1928 in the construction department. Promoted to district chief engineer and operating superintendent, he was appointed manager of industrial relations in 1949. Mr. Paul has served as chairman of the Great Lakes Personnel Conference and has been active in association matters for many years. He is a member of the Industrial Relations Association of Chicago, and a member and past president of the Personnel and Industrial Relations Committee of the Indiana Gas and Electric Association.

W. L. Brown, director of purchases, The Peoples Gas Light and Coke Co., has been appointed chairman of the

Purchasing and Stores Committee. The committee studies all phases of purchasing, receiving, protecting, storing and disbursing materials, supplies and equipment. It promotes standardization of materials, supplies and equipment to include packaging and the improvement of packaging containers. It analyzes and publishes information on materials handling. Through its conferences and publications resulting from these conferences, it performs educational and service functions for the industry's purchasing and stores community.

A graduate of Rose Polytechnic with a BS in electrical and mechanical engineering, Mr. Brown has been a one-company man. Joining the Chicago gas company's operating department 23 years ago, Mr. Brown has spent 14 years in various levels of supervision. In 1947, he joined the Purchasing Department and was appointed Director of Purchases in 1953. He is past chairman of the committee's Standardization Subcommittee.

C. Maynard Turner, vice-president, The Cincinnati Gas & Electric Co., has been appointed chairman of the Rate Committee. The Rate Committee explores and assists in studies and research related to gas company rate design and administration. It watches the impact of rates on load growth and financial results and sponsors the preparation of the "A. G. A. Rate Service." The group is also interested in other specific activities related to rates, such as long range weather trends and demand-commodity allocation in the sales of pipeline gas.

Mr. Turner was born in Chicago and received his schooling in Everett, Washington. He studied electrical engineering at the University of Wash-

ington and holds from that university a professional degree of electrical engineer. He has worked with the lighting department of the City of Seattle, with the Puget Sound Power and Light Co., and with the department of public works of the state of Washington.

He has had 20 years experience as a consultant on rate and economic matters with Electric Bond & Share and its subsidiary, Ebasco Services. Since 1950, he has been vice-president in charge of rate and economic matters for his present company and is a member of its board of directors. He has served on various industry committees of both EEI and A. G. A.

Stuart E. McMurray, treasurer, The Peoples Natural Gas Co., has been appointed chairman of the Subcommittee on Gas Industry Statistics of the Committee on Economics. This important subcommittee reviews the statistical activities of the A. G. A. Bureau of Statistics and assists other association activities in statistical matters. It conducts studies of a statistical nature or pertaining to statistical procedures under the general direction of the Committee on Economics.

Mr. McMurray is a graduate of the University of Pennsylvania and holds a degree in economics from the Wharton School. He has been with Peoples Gas since 1935, became assistant treasurer in 1946, treasurer in 1954 and was made a director in 1955. Mr. McMurray has served with the Hoover Commission's Paperwork Management Task Force.

He is a member of the Public Utilities Committee and the Advisory Council on Federal Reports. He is a member of the Pennsylvania Gas Men's Association.

J. ROBERT DELANEY, CHAIRMAN • ROY E. WRIGHT, VICE-CHAIRMAN

Hotel show at Coliseum sets mark



Combined gas section was largest exhibit at 41st National Hotel Exposition held in new Coliseum

Housed in the new air-conditioned New York Coliseum, the 41st National Hotel Exposition was host to some 50,000 visitors during the week of November 12. With 570 exhibitors occupying 707 booths on three floors, this was the largest hotel exposition ever held in New York City.

Contributing to the vastness of the exposition, the A. G. A. Combined Commercial Gas Exhibit was also the largest ever sponsored by the Industrial and Commercial Gas Section. It was the collective opinion of all the exhibitors throughout the show that it was not only the finest exhibit, but the most successful from a business standpoint.

The gas section was continually crowded with visitors anxious to see the latest models in heavy duty cooking and allied equipment. Throughout the gas section, stainless steel was

evident in exhibit after exhibit. Never before has A. G. A. had so many co-operating manufacturers to fill the nearly 4,000 square feet facing on two aisles with a lounge passageway between. The long vistas of equipment showed off to a much better advantage than ever before.

Among particular items shown by the 14 cooperating exhibitors Anetsberger Brothers, Inc.'s new line of counter equipment in stainless steel fryers, griddles, hot plates and broilers were displayed to advantage. Shown also in stainless steel were The G. S. Blodgett Co., Inc.'s regular deck oven, specialized pizza oven and candy stove.

Cecilware-Commodore Products Corporation had an attractive display of counter appliances, coffee urns and portable containers which attracted much attention. A newcomer under

the Blue Flame Banner was Char Rock Products, which showed the new gas-fired simulated charcoal broiler. Also in stainless steel and aluminum, the Cleveland Range Company had its Steamcraft and Steamchef cookers set in such a manner in a large booth that visitors could see the equipment from all sides.

An attractive lounge was provided by Gas Consumers Service where visitors could become acquainted with the nationwide service the company offers. In another large exhibit area, B. H. Hubbert & Son, Inc. had its line of steam jacketed kettles displayed. Both self gas-fired and building steam models were shown.

One of the allied items always displayed in the A. G. A. area was the Kewanee Industrial Washer Corp.'s dishwasher. These were also in stainless steel.

Guest speaker at Commercial Gas Breakfast was Mrs. Hilda Watson, American Hotel Association. Shown at speakers' table with her are (l. to r.) C. S. Stackpole, A. G. A.; J. J. Condon, Peoples Gas Light & Coke, presiding; John Sabatos, NRA head



One of the largest and most attractive displays was that by Magic Chef, Inc. Not only did the company have its full line of stainless steel hotel equipment, but it also had its deck oven in operation. A representative from Durkee Famous Foods, Inc., continually baked tasty muffins to demonstrate vegetable shortening used with commercial prepared mixes.

An item that attracted much attention was the new highspeed top burner just introduced by the Malleable Steel Range Mfg. Corp., together with their heavy duty line in stainless steel. Martin Oven Co., Inc. had two ovens on display, one a kitchen type for hotels and restaurants, the other for bakeries.

Robertshaw-Fulton Controls Co.'s booth was always a focal point for visitors to the gas area. More information seemed to be desired about temperature control than any other piece of equipment displayed. A companion item to kitchen equipment is the nec-

essary hot water supply for dishwashing. The A. O. Smith Corp. showed its two temperature water heaters and hook-up so that from the same heater both wash water and sanitizing rinse water may be had.

The Garland range division of Welbilt Corporation showed a new black porcelain enamel finish together with regular black finish and stainless steel which was in the display of heavy duty and restaurant ranges.

Another feature of the Hotel Show was a completely equipped diner. In the cooking area, all-gas equipment had been installed, which consisted of a Char-Glo broiler, a Vulcan two-burner hot plate, a griddle-broiler by MagiKitchen and two Keating fryers. A Steamcraft cooker and a Savory toaster were also used.

Alongside in the rear of the diner was a simulated basement area where the volume cooking is done. The equipment in that part consisted of a

South Bend fryer and two South Bend range sections, one open top and the other closed top. In operation was a Blodgett three-deck oven where pastries were being baked and an A. O. Smith water heater.

The Commercial Gas Breakfast, always a highlight of Hotel Show Week, was held in the Hotel St. Moritz. It was the largest ever sponsored by this Section. One hundred commercial gas men, equipment manufacturers, representatives of the volume feeding trade press and distinguished guests from hotel and restaurant associations sat down together at the ninth annual affair.

The speaker, Mrs. Hilda Watson, director of education, American Hotel Association, spoke on the education aspects of the hotel business.

Mrs. Watson pointed up the necessity for hotel and restaurant men to acquaint themselves with schools in their communities that give training in these fields. She made more specific suggestions to the gas industry which included a recommendation that more information be devised to show hotel and restaurant employees how to use gas equipment efficiently so that actual dollar savings can be realized.

James J. Condon, The Peoples Gas Light & Coke Co., Chicago, and chairman of A. G. A.'s Food Service Equipment Committee, presided at the breakfast and introduced the guest speaker and other dignitaries in the audience.

Committee meetings of those groups interested in the volume feeding segment of our industry met that week.

Murray named assistant secretary of Section



R. H. Murray

Mr. Murray has worked at A. G. A. since June 1950, except

RALBERN H. MURRAY of the American Gas Association Utilization Bureau has been promoted to assistant secretary of the Industrial and Commercial Gas Section. Effective Jan. 2, he started working directly under Mahlon A. Combs, Section secretary.

for a two-year period in the Air Force, where he did research and development work at Wright-Patterson Field.

In his last position, Mr. Murray ironed out utilization difficulties of gas utilities and manufacturers, and served as a local appliance inspector for the A. G. A. Laboratories. He was also secretary of the American Society for Testing Materials Committee D-3 on Gaseous Fuels, and served on A. G. A.'s Customer Service Committee, Committee on Gas Appliance Service Manuals, and the Metropolitan Service Managers Council.

Mr. Murray holds an M.S. and a B.S. degree from New York University.

Facts and figures

(Continued from page 21)

per cent from the 105,800 units begun in the same month a year ago. The US Department of Labor reported that November housing starts of 80,000 units were down 10.3 per cent from a year ago. During the first 11 months of the year there were 1,055,300 homes started as against 1,252,700 units begun during the comparable cumulative period of 1955.

Gas range shipments, excluding built-ins, during November totaled 141,700 units, the smallest number shipped since January of 1954 and 23.2 per cent below the shipments made during November of 1955. For the first 11 months total gas range shipments were off 9.8 per cent from the same cumulative period of 1955.

Shipments of automatic gas water heaters in November totaled 194,700 units, down slightly from the 195,500 units shipped in November of 1955. During the first ten months automatic gas water heater shipments totaled 2,427,100, up 2.5 per cent over the comparable cumulative period of 1955.

There were 74,800 gas-fired central heating units shipped during November. This was 29.1 per cent lower than the 105,500 units shipped during November of last year. For the first ten months of 1956, 1,028,500 gas-fired central heating units were shipped, up 6.9 per cent over the comparable cumulative period of 1955. Oil-fired burner installations during November were estimated at 63,579 units, down 25.5 per cent from a year ago. During the first ten months of 1956 oil-fired burner installations totaled 609,103, down 12.9 per cent from a year ago.

Automatic gas clothes dryers shipped during October reached a new record of 59,700 units, up 32.4 per cent over last October. Electric dryer shipments during the same month were up 20.9 per cent to 147,300 units. During the first ten months of 1956 gas dryer shipments totaled 345,200 units, up 25.2 per cent over the comparable cumulative period of the year before. Electric dryer shipments during this same period totaled 923,000 units up 16.9 per cent over a year ago. The American Home Laundry Manufacturers Association has estimated a record 470,000 gas dryers will have been shipped during 1956, up 28.8 per cent over the 365,000 gas dryers shipped during 1955.

Gas appliance data relate to manufac-

GAS INDUSTRY INCOME STATEMENT

(MILLIONS OF DOLLARS)

(REFERS TO ALL DISTRIBUTING UTILITIES AND PIPELINE COMPANIES)

	TOTAL INDUSTRY			NATURAL GAS		
	Twelve Months Ending September 30		Per Cent Change	Twelve Months Ending September 30		Per Cent Change
	1956	1955		1956	1955	
Total operating revenues	\$5,858	\$5,040	+16.2	\$5,315	\$4,567	+16.4
Operating expenses—operations	3,712	3,197	+16.1	3,380	2,892	+16.9
Operating expenses—maintenance	214	195	+9.7	181	165	+9.7
Operating expenses—total	3,926	3,392	+15.7	3,561	3,057	+16.5
Depreciation, retirements, depletion, amortization, etc.	380	351	+8.3	351	326	+7.7
Federal income taxes	491	388	+26.5	448	355	+26.2
All other taxes	299	260	+15.0	246	218	+12.8
Total taxes	790	648	+21.9	694	573	+21.1
Total operating revenue deductions	5,096	4,391	+16.1	4,606	3,956	+16.4
Net operating revenues	762	649	+17.4	709	611	+16.0
Other income	59	43	+37.2	40	27	+48.1
Gross income	821	692	+18.6	749	638	+17.4
Interest on long-term debt	211	203	+3.9	191	183	+4.4
Other income deductions	9	11	-18.2	8	10	-20.0
Total income deductions	220	214	+2.8	199	193	+3.1
Net income	601	478	+25.7	550	445	+23.6

turers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data compiled by the National Electrical Manufacturers Association and are reprinted by GAMA in its releases. Data relating to oil-fired burner installations are compiled by Fuel Oil and Oil Heat. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

Total sales of the gas utility and pipeline industry to ultimate consumers during October 1956 aggregated 5,229 million therms, up 11.4 per cent when compared to the 4,694 million therms sold

in the previous October. The increase was attributed primarily to a gain of about 1.1 million customers added by the gas industry since October 1955, in addition to a gain of about 7.1 per cent in the industrial use of gas.

Industrial production, as measured by the Federal Reserve Board index was 145 (1947-1949 = 100), up 1.4 per cent over October of last year. The Association's index of gas utility and pipeline sales is 220.2 (1947-1949 = 100). For the year ending October 31, gas sales by utility and pipeline companies reached a total of 71.8 billion therms, an increase of 9.3 per cent over the 65.7 billion therms consumed in the 12-month period ending October 31, 1955.

To hold gas conditioning course in Kansas

THE TWO-DAY Gas Conditioning Institute will be held at Randall's Cafeteria in Liberal, Kans., Feb. 27-28. Sponsors of the course are the University of Kansas Exten-

sion, Southwest Kansas Center, and the Southwest Kansas Petroleum Industry. For details of the course, contact Southwest Kansas Center, 201 North Main St., Garden City, Kansas.

A. G. A. Laboratories publish ASA requirements

THE LATEST appliance approval requirements, and addenda to previously published requirements, have been issued by the American Gas Association Laboratories. These publications, of special interest to gas utilities, appliance manufacturers, and code authorities, are available from A. G. A. Laboratories in Cleveland and from A. G. A. Headquarters. All became effective Jan. 1. The cost per copy is listed in parentheses.

American Standard Approval Requirements:
For domestic gas clothes dryers, Z21.5-

1956 (\$2)

For gas-fired room heaters, Z21.11-1956

(\$2)

For gas unit heaters, Z21.16-1956

(\$1.50)

For gas water heaters, Vol. I, Z21.10-1-1956 (\$2)

Addenda to American Standard Approval Requirements:

For central heating gas appliances, Z21.13.4a-1956, Vol. IV—gravity and fan-type vented recessed heaters (\$25)
For hotel and restaurant deep fat fryers, Z21.27a-1956 (\$40)

For gas-fired duct furnaces, Z21.34a-1956 (\$25)

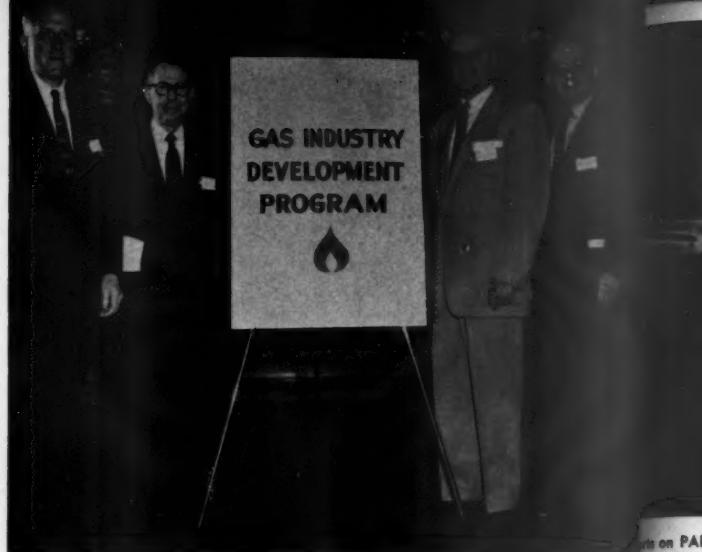
Addenda to American Standard Listing Requirements:

For metal connectors for gas appliances, Z21.24a-1956 (\$10)

Participating at Chicago meetings were (l. to r.) J. Theodore Wolfe, GID chairman; Roger J. Karcher, presiding; and panelists William Miners, C. A. Mulligan and P. R. Shea



Gas company sales executives gather for two-day meeting in Pittsburgh, where GID activities were reviewed



G. W. Coulter, Manufacturers Light & Heat, presided at Pittsburgh, where Eastern Gas Sales Council was co-sponsor, as was Midwest Council in Chicago.

Two 'sales clinics' spur GID program

Gas company sales executives, sales managers and sales supervisors from 16 Eastern and Midwestern states attended two American Gas Association "sales clinics" held during the month of November, 1956.

These sales clinics were specifically designed to provide an opportunity for gas company sales managers to learn more about the importance of the Gas Industry Development Program, the GID Demonstration City activities, details of the PAR Plan, and the promotional, advertising, public information and other activities carried out under PAR.

The meetings also featured presentations by qualified representatives of gas



Work on PAR plan activities were made by Allen D. Schrotz, director of PAR



New-home market was discussed at Pittsburgh by H. H. McMurray, Washington Gas Light Co.



Role of PAR Public Relations program in building sales was emphasized by T. H. Evans, Equitable Gas



Demonstration City programs were discussed at Chicago by panelists who said their companies had successfully carried out this type of activity



Demonstration City panelists at Pittsburgh were (left to right) L. L. Clemmer, Consumers Power; Mr. Miners; and R. L. Pijanowski, Peoples Natural

utility companies who discussed in detail the plans and programs used by their companies in selling gas in the new-home and replacement field through dealers. The importance of service in relation to sales was also discussed.

The Pittsburgh clinic, sponsored jointly by the A. G. A. Gas Industry Development Committee and the Eastern Gas Sales Council, was held at the Park-Sheraton Hotel on November 8-9. The clinic attracted an attendance of 65 sales managers and sales supervisors from the states of Pennsylvania, New York, Ohio, West Virginia, Maryland, Virginia and New Jersey. The meeting was under the direction of George W. Coulter, busi-

ness promotion manager, Manufacturers Light & Heat Co., Pittsburgh.

The November 8th morning session opened with a presentation on the Gas Industry Development Program's objectives and results, by J. Theodore Wolfe, executive vice-president, Baltimore Gas and Electric Co., and chairman of the Gas Industry Development Committee.

Mr. Wolfe's presentation was followed by a discussion of the GID Demonstration City activity by representatives of three gas utility companies conducting Demonstration City Programs. These speakers reviewed in detail the methods and materials employed in conducting this important activity, and evaluated the

results obtained. William J. Miners, residential sales manager, New Jersey Natural Gas Co., Asbury Park, N. J., discussed the test city of Cape May County, N. J.; L. L. Clemmer, general residential sales supervisor, Consumers Power Co., Lansing, Mich., spoke on the test city of Lansing, Michigan; and R. L. Pijanowski, sales promotion and advertising manager, The Peoples Natural Gas Co., Pittsburgh, Pa., reported on the test city of Altoona, Pennsylvania.

Following the clinic luncheon, the afternoon session was devoted to a panel discussion of the Demonstration City activity, in which the three speakers from the morning session acted as panel mem-

bers. Mr. Wolfe acted as the panel moderator, and many notes were taken and questions asked by those in attendance.

The morning session of November 9 was devoted to a complete review and explanation of the methods used by representative gas utility companies in selling modern gas service in the residential field. H. H. McMurray, director of sales, Washington Gas Light Co., Washington, D. C., made a comprehensive presentation regarding the activities of his company in selling the new-home market, which is so important to our industry. William H. Geller, director of sales promotion, Boston Gas Co., Boston, Mass., reviewed the activities of his company in selling the replacement market.

The important subject of selling through dealers was thoroughly discussed from the standpoint of a non-merchandising utility by J. G. Berwanger, business promotion manager, Ohio Fuel Gas Co., Columbus, Ohio. Martin M. Gibbons, manager of dealer relations division, The Brooklyn Union Gas Co., Brooklyn, N. Y., followed Mr. Berwanger, and approached this subject from the standpoint of his company, a merchandising utility, which also sells through dealers. Milton E. Elert, sales promotion representative, Michigan Consolidated Gas Co., Detroit, Mich., made an excellent presentation on the service policies used by his company and the relationship between good service and increased sales.

The first speaker at the afternoon session was Allen D. Schrodt, A. G. A. director of the PAR Plan, who discussed the objectives of PAR, its growth and development. He summarized some of the more important activities financed through the PAR Plan. Mr. Schrodt was followed by Norval D. Jennings, A. G. A. advertising manager, who presented the details of the gas industry's national television program, scheduled to start Jan. 10, 1957. Mr. Jennings also highlighted some of the major promotional and advertising activities conducted under the PAR Plan.

The third speaker on the afternoon session was Thomas H. Evans, vice-president of sales, Equitable Gas Co., Pitts-

burgh, Pa., and chairman of the A. G. A. Public Information Planning Committee. Mr. Evans made an excellent presentation regarding the objectives of the Public Information Program, its importance to the industry, and its progress to date.

The meeting was concluded by a discussion under the title, "At Your Service," by C. S. Stackpole, A. G. A. managing director, who dramatized the many diversified activities being conducted by the Association to assist its members in increasing gas sales.

The second sales clinic was held at the Edgewater Beach Hotel, Chicago, on November 15 and 16, and was sponsored jointly by the A. G. A. Gas Industry Development Committee and the Midwest Regional Gas Sales Council. The program was under the direction of Roger J. Karcher, assistant sales manager of the Michigan Consolidated Gas Co., Detroit, Michigan. Gas company sales managers and supervisors from the states of Indiana, Nebraska, Minnesota, South Dakota, Kansas, Michigan, Illinois, Iowa, Missouri, Wisconsin and Ohio were in the audience.

At the morning session on November 15, Mr. Wolfe presented in detail the Gas Industry Development Program and its importance to the industry. The next presentation consisted of a panel discussion of the GID Demonstration City Activity. The speakers included C. A. Mulligan, vice-president, Consumers Power Co., Jackson, Mich., who discussed the test city of Lansing, Mich.; P. R. Shea, general sales manager, Southern California Gas Co., Los Angeles, Calif., speaking on the test city of Pasadena, Calif.; and Mr. Miners, who again reported on the test city of Cape May County, New Jersey.

At the afternoon session the same practice was followed as at the Pittsburgh clinic; namely, the conducting of a panel, members of which consisted of the three Demonstration City speakers from the morning session, under the direction of Mr. Wolfe as moderator. Again, many questions were asked of the moderator and panel members, and those present took copious notes for future reference.

On Friday morning, November 16, those in attendance heard excellent and complete discussions by representative gas utility executives regarding the promotion and sale of modern gas service in the residential market. William V. Bell, director of sales, Metropolitan Utilities District, Omaha, Nebr., thoroughly discussed the subject of selling the new-home market, while Roy B. Munroe, domestic sales manager, The Peoples Gas Light & Coke Co., Chicago, reviewed the activities of his company in selling the replacement market.

James C. Sackman, vice-president, Northern Indiana Public Service Co., Hammond, Ind., thoroughly discussed the subject of selling through dealers from the standpoint of a merchandising utility, while H. Vinton Potter, vice-president of sales, Oklahoma Natural Gas Co., Tulsa, Okla., discussed the same subject from the angle of a non-merchandising utility. W. H. Weber, manager of the customers service department, The Brooklyn Union Gas Co., Brooklyn, N. Y., discussed the subject of selling through service, describing the service policies used by his company.

During lunch, Mr. Stackpole discussed and reviewed some of the most important activities now being undertaken by the Association in increasing gas sales. He stressed the importance of the automatic top burner heat control and the opportunity which it provides to the gas industry to sell modernity to the American homemaker, the new Colgate Palmolive all-gas laundry promotion, and other forthcoming promotions.

The afternoon session featured a discussion of the gas industry's PAR Plan by Mr. Schrot; the gas industry's television activity was reported by S. F. Wikstrom, A. G. A. coordinator of promotion and advertising, and the PAR Public Information Program was discussed by Mr. Evans.

Many favorable comments came from those attending both the Pittsburgh and Chicago clinics as to the clinic type of program, and many of those present expressed their belief in the importance of such programs.

Automatic pilots now required on commercial gas equipment

STARTING this month, automatic pilots are required for American Gas Association approval on commercial range ovens, deck bake ovens, and deep fat fryers.

In line with this advance in commercial gas equipment, the A. G. A. Industrial and

Commercial Gas Section has prepared a bulletin for gas company commercial departments describing what automatic ignition is and what it does, the sales significance of automatic ignition, and methods of explaining its merits to dealers, salesmen, and customers.

The bulletin, available free from A. G. A., is entitled "A Special Milestone of Progress in Commercial Gas Cooking."

A new special issue of *Flame Facts* points out to dealers and their salesmen the most effective way to sell automatic ignition.

Industry news

Gas use in new homes remains at high level

SEVENTY-TWO PER CENT of all new one-family homes started during the first quarter of 1956 used gas for heating, and 74 per cent used gas for water heating. These facts, as well as a wide variety of other data regarding the characteristics of new housing, have just become available in preliminary form, from a special survey co-sponsored by A. G. A., GAMA, and a number of other

Atlanta plans to spend \$8.8 million for expansion of service

FOR ITS current fiscal year which began Oct. 1, the Atlanta (Ga.) Gas Light Company plans to spend a record \$8.8 million for expansion of service throughout the 50 communities it serves, according to R. G. Taber, president of the company. The company-wide forecast for increase in customers is 23,000

Equitable accident prevention group exhibits safety equipment

EQUITABLE GAS Company officers, directors and employees were given the opportunity by the company's accident prevention division to examine and become acquainted with the wide variety of safety equipment used by the company to protect its employees, customers, and the general public. Scene of the exhibit was the seventh floor auditorium in the company's headquarters building in Pittsburgh, Pennsylvania.

Officers and directors previewed the display and a demonstration of the care and use of the equipment followed the regular board meeting. The safety devices were exhibited during the balance of the week to give general office employees and others who do not normally come in contact with such equipment a chance to examine explosimeters, gas masks, pipeline locators, fresh air masks, street barricades, ear protectors and other protective apparatus vital to safe operating practice.

The manager of the company's accident prevention division, G. M. Probst, and two supervisors, H. W. Taylor and Alex Gray, were on hand to answer questions and to explain how the equipment should be used and the many safety functions that are performed in day to day utility operations.

President A. W. Conover, said the purpose of the display was twofold. "First, it is in line with the company's policy of trying to

organizations, and conducted by the U. S. Bureau of Labor Statistics.

Each year the BLS undertakes a survey of new housing starts, obtaining certain limited and basic information required by the government. In the 1956 study a group of business organizations appended to the existing BLS form detailed questions on the characteristics of new housing and the equipment installed.

According to the report, ranges were included as builder-supplied equipment in 35 per cent of the one-family homes built in the first quarter of 1956, an increase from 21 per cent only six years ago. The importance of builders and architects as a source of decisions regarding cooking equipment is thus evident. The survey also indicates a more favorable attitude toward electric ranges on the part of builders and architects than that held by home purchasers. This was measured by subsequent installations of cooking equipment where the choice was made by the home owner.

In addition to the 35 per cent of ranges installed by builders as part of the purchase price, builders supplied ranges in 20 per cent of the homes as an optional extra on request of the purchaser. Thus, over half the ranges installed in new homes may have been

purchased through wholesale or trade channels rather than the normal retail appliance outlets.

Clothes dryers were installed in 19 per cent of all new homes, either as part of the purchase price or as an optional extra. Electric dryers were preferred for such installations in the ratio of 1.4 to 1 as compared to the national average for all clothes dryer sales of 2.7 to 1. Incinerators were installed in seven per cent of new homes, while sink disposal units were included in 38 per cent.

As pointed out previously, gas was used for water heating in 74 per cent of new homes. It may, however, be surprising to learn that electric water heating was used in 15 per cent of all new homes started during the first quarter of 1956.

Seventy-five per cent of all new homes were equipped with 220 volt, three-wire electric service, thus providing an indication of the extent to which electricity may be able to compete in the future replacement market at relatively modest installation cost.

The A. G. A. Bureau of Statistics has obtained complete sets of all pertinent punched cards from the survey, and will soon undertake additional and more detailed analysis under the sponsorship of the Committee on Marketing Research.

which would bring total customers to nearly 330,000.

It is contemplated that natural gas service will be extended to six incorporated communities before next heating season. These towns are Palmetto, Stockbridge, and Fayetteville in the Atlanta area, Acworth and

Kennesaw in Cobb County, and Winterville in Clarke County. Work is scheduled to begin next spring.

The most important single piece of construction to be completed during the year will be the \$2 million propane-air plant near Atlanta.

expand the employee's knowledge of the company beyond his immediate job, and second, it is designed to help solve a definite need

for general employee education on the availability and proper use of this type of equipment.



James M. Land of Equitable listens to a curb box locator at a display of the company's safety equipment. The display showed protective devices for employees and the public, including explosimeters, gas masks, street barricades, pipeline locators, gas detectors, ear protectors. Left to right: J. M. Bovard, S. K. Schiff, Mr. Land, company directors; D. B. Beecher, director and vice-president and general manager; A. W. Conover, president; J. H. Marks, vice-president of operations

New high-pressure gas main loop encircles Worcester

WORCESTER will become one of the first cities in the nation to enjoy the advantages of a high-pressure gas main loop which now completely encircles the city, according to John F. Wood, Worcester division manager of the Worcester (Mass.) Gas Light Company. Utility company officials recently gave the signal to start testing the final tie-in segment of a 25-mile pipeline which was initiated back in 1927 and was completed last month at a cost of some \$665,000.

John P. Lutz, distribution superintendent, stated that this type of circumferential belt line has been a major goal for distribution

of utility gas.

With a dozen regulator stations along its route, the line, which now encloses the heavy population centers, is designed to maintain constant gas pressure. In addition, other lines now feed out to other suburban cities and towns and to other areas of population growth as well as to new industrial consumers.

Even while the loop was being constructed in segments, the portions which had been completed were able to provide immediate service to numerous large users.

The main problem in planning the loop

was to supply the immediate needs of whole areas of the city and the suburbs through the maze of internal low-pressure gas distribution pipelines, while at the same time plotting the best possible locations for the loop line that would one day skirt the perimeter of the whole city.

A valve located every 2500 feet along the entire length of the pipeline adds flexibility to the distribution system. In cases such as the Worcester tornado, these valves could shut off particular areas, circumventing damaged sectors to provide normal service to customers in other locations.

Brooklyn Union's October appliance sales pass \$1 million mark

IN OCTOBER, for the second time in the merchandising history of The Brooklyn Union Gas Co., monthly appliance sales exceeded the \$1 million figure. The first time Brooklyn Union hit this mark was in September 1950 when pre-buying caused by the Korean incident helped push sales to \$1,039,-

953. The October 1956 figure was \$1,026,586, only \$13,367 short of the all-time record.

Most outstanding sales accomplishment during October was the sale of househeating jobs. Oil burner replacement activity continued favorably so that in this market hundreds upon hundreds of oil-fired units are

being discarded each year by homeowners in favor of gas equipment.

Brooklyn Union's strong sales program sparked the increase in appliance sales. The company conducted a dealer contest and an employee lead plan contest, and invited manufacturers to help train the utility's salesmen.

Public relations workshops held in Des Moines, Pittsburgh

-a PAR activity

SIGNIFICANT EVIDENCE that the gas industry is

gaining maturity in the public relations field was presented at A. G. A. Regional Workshops in Pittsburgh on Nov. 29 and Des Moines on Dec. 5. Leon Zuckerman, public relations director, New Jersey Natural Gas Co., and John M. Hollingsworth, assistant vice-president, Iowa-Illinois Gas Co., presided as chairmen.

T. H. Evans, chairman, A. G. A. General Public Information Planning Committee, told the Pittsburgh group that gas industry management is keenly aware today of the need for public understanding and support.

Edward G. Twohey, vice-president, Mystic Valley Gas Co., Malden, Mass., suggested

that public relations thinking and planning should be gauged by their long-range effect upon company earnings.

Charles E. Parker, president, Central Surveys, Inc., told the Des Moines group that "if people think your cost of service is reasonable, they will believe a lot of other things in your favor." The principal problem facing utilities, he said, is to hold the support of the majority of the public against a militant minority.

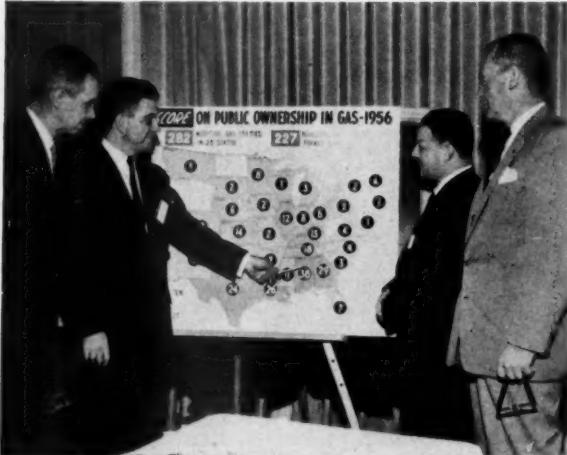
Other discussion leaders at the workshops noted that municipal ownership of gas is increasing at an alarming rate. Latest tally shows 315 municipal gas companies in 34 states. The majority, 229 of these, came into existence since 1945.

New officers for 1957 workshops were

elected as follows: Mid-Eastern region chairman, Alfred H. Doud, assistant director of public relations, Rochester Gas & Electric Corp.; vice-chairman, Willis M. Kimball, director of information, The Columbia Gas System, Inc.

Mid-Western region chairman, Robert F. Calrow, advertising manager, Minneapolis Gas Co.; vice-chairman, Robert Naylor, director of public relations, Montana-Dakota Utilities Company.

Including the Pittsburgh and Des Moines meetings, seven regional public relations workshops have been held this year under A. G. A.'s Public Information Program. This program is now completing its second year as part of the Promotion, Advertising and Research Plan.



David Kerr of Southern Union points out score on public ownership during Mid-Eastern PR Workshop in Pittsburgh. L. to r.: A. C. Howland, Rochester Gas & Electric; Mr. Kerr; Leon Zuckerman, New Jersey Natural, chairman; A. H. Doud, Rochester Gas & Electric, chairman-elect



Discussing theme of Workshop in Des Moines, "As the Public Sees Us and What To Do About It," are (l. to r.): Daniel H. Mowat, Peoples Gas Light & Coke; Ed Wendel, Iowa Public Service; John Hollingsworth, Iowa-Illinois Gas & Electric, chairman; C. E. Parker, Central Surveys

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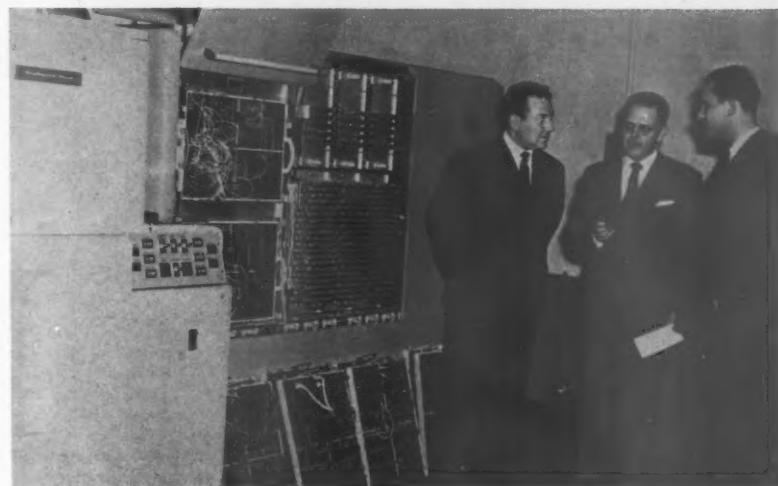
Italian natural gas expert visits New Jersey utility company

A LEADING ITALIAN expert in natural gas recently visited the centralized tabulating section at New Jersey Natural Gas Co., Asbury Park, to determine if the system used there is adaptable to operations in his country.

Dr. Italo Ragni, administrator of the National Society of Gas Pipelines, Milan, expressed particular interest in the company's use of the Univac in its billing, statistical gathering and records maintenance.

Dr. Ragni's organization has provided natural gas from the Po Valley for all of northern Italy since natural gas was introduced in that country in 1949. His organization is concerned with all phases from exploration to home delivery of natural gas, and the purpose of his visit was to see if the consolidation of accounting could be adapted to all of these operations.

He said the gas industry there employs all of the newest equipment and material known, such as welded, wrapped steel mains, the same type used by the New Jersey Natural Gas Company. He also said in his country the pressures are comparable to those used in the United States and the pressure regulation systems are the same.



W. A. Pearce, supervisor of the tabulating section of the New Jersey Natural Gas Co., explains the workings of the electronic computer to Dr. Italo Ragni (l.), administrator of the National Society of Gas Pipelines, and Franco Vacchiani (r.) of the Italian embassy in Washington, D. C.

Publish official 1957 registry of industrial radio systems

THE 1957 official Registry of Industrial Systems, revised annually from FCC records at Washington, is now available for use by company officials, radio supervisors, and communication engineers.

Part 1 lists all systems in the low-power industrial, special industrial, forest products, power utility, petroleum and gas, relay press, motion picture, and VHF maritime services. It shows name and address of each licensee; location of each fixed transmitter; call let-

ters; number of mobile units authorized; operating frequencies; and manufacturer of equipment used.

Part 2, added this year for the first time, lists the licensees according to the transmitting frequency employed. This has been done at the request of the communication engineers and frequency co-ordinating committees. The new edition contains 153 pages, nearly twice as many pages as in the previous edition.

These registries have become a standard reference in radio communication, since the FCC does not put out an equivalent publication.

Other registries, devoted to transportation, public safety, and common carrier systems, are published annually in March, June, and September respectively. The editor is Edith V. Sleeper, the publisher, Communication Engineering Book Co., Monterey, Mass. Cost per copy is \$5.

Pipeliner offered varied program at March NACE conference

PIPELINERS will be offered a wide selection of programs with useful technical information during the March 11-15 meeting of the National Association of Corrosion Engineers. Sessions of interest to pipeliners on corrosion control matters will be given at Kiel Auditorium, St. Louis, among the 13 symposia and other events scheduled.

A symposium on general problems related to pipeline corrosion, small group discussions

and a pipeline and underground corrosion problems round-table are specifically aimed at pipeline workers. Other symposia of interest to them include cathodic protection, plastic materials of construction, coatings, fundamentals and corrosion inhibitors.

Numerous meetings of technical committees occupied with pipeline and underground corrosion problems are among the 80 scheduled during the week. The annual exhibition

also includes displays of materials, methods and services in connection with underground corrosion matters.

NACE meetings are open to all persons interested in corrosion control. Data on advance registrations and the exhibition of corrosion control materials, processes and services, can be obtained from the NACE central office at 1061 M & M Building, Houston 2, Texas.

Cascade meets demand for natural gas in Pacific Northwest

CASCADE NATURAL Gas Corp., franchised in 32 Pacific Northwest cities, plans a continued program of construction during 1957 to meet the overwhelming demand for natural gas among its many industrial, commercial and residential customers.

In December, the company concluded the last of a series of 19 "turn-on" ceremonies, when natural gas was officially welcomed to Bellingham, Washington. This rounded out a program for 1956 which began in early September with the arrival of natural gas at Baker, Ore., southernmost city on the system.

During that short space of time, these

were the highlights of Cascade's activities.

1. Signing up of more than 12,000 applicants, who are being added to natural gas mains as fast as connections can be made.

2. Turning on natural gas in large industrial plants, including the Oregon Fiber Products plant at Pilot Rock, first industry in the Pacific Northwest to use natural gas.

3. Changeover to natural gas of scores of commercial establishments, principally hotels and large laundries, which first saw the advantages and economies of the new fuel.

4. Ground-breaking for a new \$350,000 administrative headquarters building which the company will complete in Seattle during

1957, and continued improvement in its other locations. During 1957 this program will include moving to new quarters in Yakima. The company already has set up new quarters in Shelton, Pasco, Kennewick, Anacortes, Baker and Toppenish.

5. Construction of new distribution systems and extension of existing ones at a cost of \$14 million, all of which was done since April of last year.

During 1957 Cascade expects to complete distribution systems in Burlington, Anacortes and Sedro-Woolley, Washington, and in Hermiston, Oregon, and will spend \$1,350,000 in new construction.

Gas utility industry reaches 30-million customer milestone

SOMEWHERE in the United States on Tuesday, Dec. 11, the gas utility industry was connected with its 30-millionth customer, the American Gas Association has announced. The location of this customer cannot be pinpointed, since the industry is now so widespread. A. G. A. reports that gas service is now provided in 45 states and the District of Columbia, with Idaho to be added shortly. Manufactured gas service is available in the remaining two states—Maine and Vermont.

A number of important milestones are anticipated in the near future. Projections pre-

pared by the A. G. A. Bureau of Statistics indicate that nearly one million additional new customers will be connected during each of the next nine years, with total customers at about 38.5 million by 1965. Of this number, 35.3 million will be residential users; 27.5 million of these will use gas for heating their homes.

The achievement of the 30-millionth customer milestone represents the doubling of customers served in less than a generation. In 1932 the industry served only 15.5 million customers. The preponderance of the growth

in gas utilization occurred during the post-war period. More than 10 million customers have been added to the lines of gas companies since 1946.

Total sales of gas in 1965 by utilities and pipelines will aggregate 116 billion therms, an increase of 73 per cent over the current level and nine times the level of sales two decades ago. To meet these increasing demands for gas service, the industry will spend nearly \$19 billion between 1956 and 1965, almost twice the amount spent in the decade of 1946-55.

Eight Phillips Petroleum employees die in airplane crash

EIGHT EMPLOYEES of Phillips Petroleum Company were killed when their airplane crashed and exploded in a snowy pasture.

The dead were identified as A. M. Rippel, 61; C. W. Binckley, 45; William C. Reed, 37; Donald Young, 31; D. F. Mayfield, 49; George L. Sneed, 49; Joe Power, 38; and R. E. Ulrich, 36.

The plane was trying to turn back to the Bartlesville, Okla., airport when it crashed four miles away. It was bound for Salt Lake City from Bartlesville, and developed engine trouble a few minutes after taking off. Bartlesville is the company's headquarters.

Mr. Rippel was manager of the company's natural gas division, and company delegate

to the American Gas Association. He joined Phillips in 1925, after working as an engineer with the Empire Gas and Fuel Company.

Mr. Sneed was an attorney, Mr. Bower the pilot, and Mr. Ulrich the co-pilot. The other men were all members of the company's natural gas department.

Blue Flame Gas Association elects L. E. Nelson president

TWO HUNDRED delegates attended the third annual meeting of the Blue Flame Gas Association, held last month in Columbus, Nebraska. Annual reports on committee activities were presented, and officers for 1957 were elected. L. E. Nelson, Kansas-Nebraska Natural Gas Co., was elected president succeeding H. R. Slocum, Central Electric and Gas Company.

Other new officers are: first vice-president, W. V. Bell, Metropolitan Utilities District; second vice-president, Carl Olson, Central Electric and Gas Co.; third vice-president, Larry Shomaker, Northern Natural Gas Co.; and secretary-treasurer, Herb Nelson, Northwestern Public Service Company.

Delegates heard Jim Riley of Colgate-Palmolive Company speak on his company's

campaign for 1957, and J. H. Mikula, Milwaukee Gas Light Co., and chairman, Gas Industry Unity Committee, discuss the committee's activities to promote unity. A challenging speech entitled "Why Are You Here?" was presented by Managing Director C. S. Stackpole of A. G. A.

A. T. Carow of Cribben and Sexton also addressed the group.

Diplomatic sign



A diplomatic way of handling the inconvenience caused by construction work—and a good way of keeping the company name before the public eye—is a friendly sign like the one by North Shore

A.G.A. announces new publications

GENERAL MANAGEMENT

- **Foresight and Feedback** by Raymond Stevens (for top management). Available free of charge from the General Management Section.
- **Materials Handling Item No. 40, Yardlift** (for purchasing agents and storekeepers). Sponsored by Purchasing and Stores Committee and available free of charge from the General Management Section.

Note: The above two publications are listed here to correct an error which appeared in their listing in the November issue. They were published in October.

- **Materials Handling Item No. 41, Meter Dolly, Carrying Handle and Track** (for purchasing agents, storekeepers, and accident prevention supervisors). Sponsored by the Purchasing and Stores Committee, and available free of charge from the General Management Section.

SAFETY

- **Safety Siftings** (for safety personnel). Sponsored by Accident Prevention Committee. Single copies available free from A. G. A.
- **How Injuries to Gas Men Might Be Avoided** (for safety personnel). Sponsored by Accident Prevention Committee. Single copies available free from A. G. A.

LABORATORIES

- **Safety Is Our Business** (for gas companies). Single copies of this revised edition of the A. G. A. Laboratories' employee's safety booklet are available free of charge from the Laboratories or Headquarters.

PAR

- **PAR Briefs** (for gas company executives). Sponsored by PAR Committee, and available free of charge from A. G. A. Headquarters.

STATISTICS

- **Quarterly Report of Gas Industry Operations, Third Quarter 1956** (for gas companies, financial houses, market researchers). Sponsored by and available from Bureau of Statistics; free.

UTILIZATION

- **Investigation of the Performance of Automatic Storage-Type Gas and Electric Domestic Water Heaters** (for utility and water heater manufacturer sales personnel). This University of Illinois Engineering Experiment Station Bulletin No. 436 was sponsored by the A. G. A. Committee on Comparison of Competitive Services, and is available at 60 cents a copy from A. G. A.

Contest winner guest at United Nations



Mrs. Elizabeth Endres (seated), cooking contest winner, visits the UN Delegates Dining Room. With her are (standing, l. to r.): C. S. Stackpole, managing director of A. G. A.; Glenn Bennett, UN chief of visitors' service; Mrs. Dragoslav Protitch, wife of the UN Undersecretary for Political and Security Council Affairs; and her husband, John Endres.



An international motif set the theme for the UN Cookbook Contest sponsored by the Cincinnati Gas and Electric Co., "The Cincinnati Enquirer," and the Cincinnati Council on World Affairs. Fifteen different gas ranges were in use to prepare the recipes of the finalists, and 30 more, two of each brand, were on display in the lobby for the utility's visitors.

A TRIP to New York and a luncheon party in the United Nations' Delegates Dining Room was the prize won by a Cincinnati housewife in the UN Cookbook Contest, sponsored by the Cincinnati Gas and Electric Co., and *The Cincinnati Enquirer*.

The luncheon for Mrs. John Endres came after a tour of the UN buildings and was attended by her husband; Mrs. Dragoslav Protitch, wife of the UN Undersecretary for Political and Security Council Affairs; Glenn Bennett, chief of visitors' service for the UN; Irving Berger, director of the Cincinnati Council on World Affairs; and C. S. Stackpole, American Gas Association managing director.

Following lunch, Mrs. Endres went to the gas-equipped UN kitchen and prepared her prize-winning dessert, a German-Dutch nuss torte with rum crème filling. She presented it to George J. Janecek, director of the UN's public liaison and distribution division.

The UN Cookbook Contest actually got under way in July when the *Enquirer* ran several large ads inviting Greater Cincinnati

housewives to send in their favorite recipes in any one of ten national or geographic categories. From the many thousands of recipes submitted, CG&E home economists selected 15 in each food category to compete in the bake-offs, which started on Oct. 15.

The women brought the pots, pans, bowls, utensils and ingredients with them, and baked their specialty right in the CG&E lobby. Fourteen range manufacturers were represented. As each contestant arrived, she drew the name of a range at random to determine on what range she would do her cooking.

Each day during the two weeks of bake-offs a winner in each category was selected.

From these two main awards were given. First was the all-expenses-paid trip to New York for the winner and her husband. Second prize was an automatic gas range.

Each day the daily winner received a beautiful imported bronze pitcher made in Israel; all other women entered in the bake-offs received an attractive cutting board made by Woodcroftery, Inc. All the finalists received 100th anniversary cookbooks donated by the

Rudolph Wurlitzer Company of Cincinnati, and two tickets to "Seven Wonders of the World," the Cinerama presentation at the Capitol Theater.

Wurlitzer and Cinerama played an important part in the contest promotion. Cinerama displayed an exhibit of large photographs taken in all parts of the world during the filming of "Seven Wonders of the World." The Wurlitzer Company furnished an electronic piano and a "musical chef" who played during the lunch hour each day.

In addition to the 14 ranges used for cooking, there were 25 other ranges on display in the lobby. Each range incorporated the very latest features and modern design. All ranges were tagged as to model number, price, features and where available.

The CG&E lobby was crowded with interested onlookers during the promotion. Crowds milled around each cook, inspecting her cooking and asking questions about her recipe. Crowds looked over the display of gas ranges and made inquiries as to price, availability and features.

GAMA study finds rural market important for gas appliances

THE IMPORTANCE of rural markets in the sale of gas appliances, and in the many modernization items that often are sold with appliances, is emphasized in a detailed study released by Edward R. Martin, Gas Appliance Manufacturers Association director of marketing and statistics. It shows that despite the population movement from farms to cities in some areas, the rural market has maintained a position of key importance.

The study finds that by the end of this year the number of domestic gas ranges made for liquefied petroleum gas during the postwar period will be past the 5.4 million mark. In the same time, nearly three million water heaters using this fuel will have been installed.

market important for gas appliances

"The rural family," Mr. Martin comments, "clearly is at the head of the parade in its demands for the comforts, conveniences and health benefits modern gas service can bring. The farm home market has blended with growing suburban and resort markets in a tremendous postwar push toward home modernization and upgraded living standards."

"As a result, sales of gas appliances and equipment for use beyond utility gas lines—that is, for use with liquefied petroleum gas—account for over 20 per cent of the total in some key classifications. This is a most remarkable achievement in view of the tremendous expansion of natural gas pipelines and of utility lines distributing natural gas."

The following are some of the GAMA of-

ficial's figures for the decade ended with 1955: Of the 23,127,500 domestic gas ranges of all types shipped by manufacturers, 4,988,900 or 21.6 per cent, were for LP-Gas. The LP figure for water heaters was 2,612,400 or 13.4 per cent of the 19,509,600 produced for both "city" and LP-Gas.

Last year LP ranges were listed at 453,300, or 20 per cent of the shipment total for all gas ranges, and for water heaters the figure was 349,000, or 12.7 per cent of the record output for all gas types.

Mr. Martin points out that in addition to its big total in ranges and water heaters, the rural market has accounted for vast numbers of heating units, clothes dryers, refrigerators and incinerators.

Interpretations of 1955 pressure piping code published

REQUESTS for interpretation of Section 8 of ASA B31.1-1955, or changes suggested by practical experience in using the code, are communicated to the Secretary of the B31 Committee, 420 Lexington Ave., New York 17, New York. These letters are assigned to the appropriate subcommittee, which formulates an answer.

At times, the information contained in the answer will not change the code, yet may be of sufficiently broad interest to be made generally available. Similarly, it is necessary for everyone concerned to be informed when new materials or alternate construction received approval for use under the code.

Under these circumstances, the subcommittee involved submits the information or change of the B31 executive committee for approval as a "case." Upon approval, the case is published in the ASME publication, *Mechanical Engineering*.

The ASME has granted permission to reprint the following cases affecting Section 8. They appeared in the October 1956 issue of *Mechanical Engineering*.

Case No. 24

Pending the publication of a new edition of Section 8, Gas Transmission and Distribution Piping Systems, of the Code for Pressure Piping, the following changes are hereby in effect:

Paragraph 824.23: Delete the words "and hardenability" in the third sentence.

"Alloy steels having weldability characteristics demonstrated to be similar to these carbon steels shall be welded, preheated, and stress relieved as prescribed herein for such carbon steels."

Paragraph 831.22: ASTM Specification A354 Quenched and Tempered Alloy Steel Bolts and Studs with Suitable Nuts is approved as an additional material where ASTM A193 is now listed.

ASTM Specification A325 Quenched and Tempered Steel Bolts and Studs with Suitable Nuts and Plain Hardened Washers is approved as an additional material where ASTM A261 is now listed.

Paragraph 841.16 (f): Change the word "moisture" to "water" in the second and the last sentences.

Paragraph 841.262: Delete the present wording and substitute the following new requirement:

"Electrical test leads may be attached directly onto the pipe by the thermit welding process using aluminum powder and copper oxide provided the charge is limited to No. 15 (15 gram) cartridges and the size of electrical conductor restricted to No. 6 AWG or smaller. Where the application involves the attachment of a larger wire, use a multistrand conductor and rearrange the strands into groups no larger than No. 6 AWG and attach each group to the pipe separately, using a No. 15 (15 gram) cartridge of powder. Attaching electrical test leads directly onto the pipe by other methods of brazing is prohibited."

Paragraph 845.21: Change the word "are" to "include" in the first sentence.

"Suitable types of protective devices to prevent overpressuring of such facilities include:"

Paragraph 845.32: Change the word "are" to "include" in the second paragraph.

"Suitable types of protective devices to prevent overpressuring of a high-pressure distribution system include:"

Paragraph 845.42: Change the word "are" to "include" in the second paragraph.

"Suitable types of protective devices to prevent overpressuring of low-pressure distribution systems include:"

Paragraph 845.62: Delete the last sentence and substitute new wording. Paragraph will read:

"The discharge stacks, vents, or outlet parts of all pressure-relief devices shall be located where gas can be discharged into the atmosphere without undue hazard. Consideration should be given to all exposures in the immediate vicinity. Where required to protect devices, the discharge stacks, or vents, shall be protected with rain caps to preclude the entry of water."

Paragraph 849.1 (a): Delete the present wording entirely and substitute the following:

"(a) Vaults and pits shall be designed and constructed in accordance with good structural-engineering practice to meet the loads which may be imposed upon them."

Case No. 25

Inquiry: Paragraph 841.432 literally interpreted could imply a degree of perfection not attainable with even the most modern equipment. What constitutes compliance with this requirement?

Reply: It is the opinion of the committee that the practical limitations of modern equipment shall be given proper consideration. This section requires the exercise of responsible and experienced judgment rather than numerical precision.

Western Kentucky occupies new general office building



Western Kentucky Natural Gas Company's new building houses general offices; offices of Kengas, Inc., an LP-Gas subsidiary; and a Blue Flame Room. For the convenience of customers, the building has a drive-in bill payment window, an off-the-street parking area, and a night depository.

WESTERN KENTUCKY Gas Company on Oct. 25 officially occupied its modern new general office building in Owensboro, Kentucky. Casper S. Gardner, mayor of Owensboro, and W. T. Stevenson, president of the company, formally opened the building with a ribbon-cutting ceremony. The *Owensboro Messenger and Inquirer*, which issued a 22-page special section featuring Western Kentucky Gas Co., referred to the building as the "most modern" in Owensboro.

After the opening ceremony, the company was host to people of Owensboro and the surrounding area during a three-day open house period.

A large number of people from the area and visitors from throughout Kentucky as well as many out-of-state visitors, toured and inspected the new building. A special preview showing of the building was held for press and radio representatives prior to the general open house.

The building features a Blue Flame Room—a meeting room completely equipped with the latest developments in gas appliances. The Blue Flame Room, which will seat 60 people, is available for use by women's clubs and other organizations.

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ISSUE

Evans and Purcell head A.G.A. public information task force

THOMAS H. EVANS, vice-president, Equitable Gas Co., Pittsburgh, has been appointed chairman of American Gas Association's General Public Information Planning Committee for 1957. James F. Purcell, manager of public relations, Northern Indiana Public Service Co., Hammond, will continue for a second year as chairman of the A.G.A. Public Information Projects Committee.

The two groups comprise a 33-man task force that plans and conducts A.G.A.'s long-range program to promote better public understanding of the investor-owned gas industry. This program is part of the PAR Plan (Promotion, Advertising, and Research) and stresses close working cooperation with regional gas groups and local gas men.

The following six major information tar-

gets for 1957 were approved by the General Public Information Planning Committee, meeting in Pittsburgh on Nov. 30: 1) Show the public service advantages of the investor-owned gas industry; 2) Demonstrate that gas is an expanding industry with a big future; 3) Develop a receptive climate for sales; 4) Help recruit new employees for the gas industry; 5) Win public support for the gas industry's financial and rate requirements; 6) Correct misstatements and prevent harmful publicity about gas.

This PAR Public Information Program will continue to supply local companies with public relations items such as institutional ads, booklets, and speech materials.

Seven regional public relations workshops were held throughout the country last year



T. H. Evans



J. F. Purcell

and more of these "idea clinics" will be held in 1957. A.G.A. will also expand its publicity coverage of the gas industry at the national level.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

• Arkansas Louisiana Gas Co.: The FPC received application from the company requesting authorization to construct and operate transmission and field facilities at an estimated cost of \$6.6 million of which \$2.3 million was to be completed in 1956 and the balance during 1957. The company also requested authorization to continue to operate \$46.1 million of existing transmission facilities and \$10.5 million of existing field facilities.

• Cities Service Gas Co.: Temporary authority to construct and operate approximately 60 miles of pipeline in Oklahoma was granted by the FPC to Cities Service. Completion of facilities, estimated to cost \$1.3 million, will enable the company to purchase dry and casinghead gas from producers in the Eureka area in Grant and Alfalfa Counties. In two other actions relating to Cities Service, the FPC permitted company to operate previously authorized facilities constructed at an overall cost of \$4.2 million. One project, costing \$2.8 million, consisted of drilling and connecting 55 injection and withdrawal wells in the McLouth Storage Field, Kans., the addition of 6,750 compressor horsepower, and approximately 35 miles of pipe in Kansas and Missouri. The second project involved the replacement of 12 miles of pipe and the construction of an additional 17 mile loop line in Oklahoma at a cost of \$1.4 million. These facilities are designed to increase peak day deliveries to existing customers in Texas, Oklahoma, Kansas, Nebraska and Missouri.

• El Paso Natural Gas Co.: The FPC granted temporary authority to El Paso to acquire and operate a gasoline plant and related facilities from Lone Star Producing Company for \$1.2 million. In order to secure additional gas for processing, temporary authority was granted to construct and operate 38 miles of pipelines and to

increase compressor capacity by 2,640 horsepower at an estimated cost of \$1.4 million. Hunt Oil Company will pay half the cost of acquisition and construction of the proposed facilities, which are all located in Texas. Residue gas will supplement El Paso's existing reserves.

• Kansas-Nebraska Natural Gas Co.: The company has been authorized by the FPC to construct and operate about 61 miles of gathering lines and measuring equipment extending from the Camerick Field in Oklahoma to Northern Natural Gas Company's receiving station in Liberal, Kans., at an estimated cost of \$1.4 million. Northern will take all gas produced from this field over a three-year period, and at the end of the period will return up to two-thirds of the quantity taken, from its reserves in the Kansas-Hugoton Field.

• Natural Gas Pipeline Company of America: The FPC has authorized Natural Gas Pipeline to construct a 350-mile line extending from Wise County, Texas, to a connection with its existing system at Fritch at an estimated cost of \$32 million, including \$3.6 million for production and gathering facilities. The new line, with a capacity of 250 million cubic feet of gas daily, will enable the company to obtain additional gas along the route from independent producers in northern Texas and southwestern Oklahoma, for resale in Chicago. Initial deliveries are expected to average 78 million cubic feet daily. At the same time, Lone Star Gas Company was authorized to sell a maximum of 100 million cubic feet daily to Natural, at a point in Stevens County, Okla., where Natural's new line will intersect the Lone Star system. Last February the commission denied Lone Star's competing proposal to build a 230-mile line to make this gas available to Natural at Fritch, Texas. Lone Star was given 30 days to accept or reject the certificate authorizing sales to Natural in Stevens County.

Rate cases

Effective Nov. 27, the FPC approved a settlement on a change in a natural gas service agreement of Northern Natural Gas Company. Northern proposed it had the right to adjust automatically the rates to its distribution customers whenever such changes are required to cover the cost of service, including a fair return. The settlement provides a clause allowing Northern to file new rate schedules and also reserving the rights of customer companies to file protests.

In another action, Iroquois Gas Corporation filed an application with the FPC seeking authorization to acquire by merger the Republic Light, Heat and Power Company through an exchange of stock. Both companies, operating in New York state, are subsidiaries of National Fuel Gas Company. The purpose is to simplify corporate structure and administration of the National companies.

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—NOVEMBER 1956

	Annual Number	Amount
Tax rate increases allowed without suspension	5	\$ 1,187
Other rate increases allowed without suspension	81	1,405,128
Rate increases suspended	22	78,695
Total rate increases	108	1,485,010
Tax rate decreases allowed without suspension	49	43,583
Other rate decreases allowed without suspension	—	—
Total rate decreases	49	43,583
Total rate filings (all types)	431	
Total rate filings acted on from June 7, 1954, to November 28, 1956	18,847	
Rate increases disposed of after suspension (during November)	1	
Amount allowed	—	
Amount disallowed	—	
Amount withdrawn	—	
Rate increases suspended and pending as of November 30, 1956	348	\$22,249,875

Two German utility men study North Shore accounting methods



Utility executives from Germany were shown accounting procedures used at Illinois utility. Left to right: C. E. Packman, North Shore secretary-treasurer; Dr. Hans Karl Schneider, University of Cologne; Dr. Karl Mahlert, Thyssen Gas and Water Works; and Roy E. Jones, North Shore president

Chicago in '59

THE American Gas Association has announced the selection of Chicago as the site of its 1959 convention, with sessions to be held Oct. 5-7 at the Conrad Hilton Hotel. The A. G. A. convention has been held in Chicago six times previously, last in 1949. The 1957 convention will take place Oct. 7-9 at Kiel Auditorium, St. Louis; the 1958, also in October, in Atlantic City. The Association has been holding annual conventions since 1919. Its first convention was held in New York City.

To admit papers

AT A RECENT MEETING of the council of the International Gas Union, it was decided to admit the presentation of individual papers by members of affiliated organizations at IGU's seventh International Gas Conference. This conference will be held in Rome in September 1958. The United States delegates to IGU, Robert W. Hendee, consultant, and Karl B. Nagler of The Peoples Gas Light & Coke Co., will screen suggestions for the papers. Individual papers are limited to three per member country.

NORTH SHORE Gas Company was recently host to two distinguished utility executives from Germany, Director Dr. Karl Mahlert of the Thyssen Gas and Water Works of Duisburg-Hamborn and Dr. Hans Karl Schneider of the University of Cologne. Both men are visiting the U. S. to study the accounting departments of certain public utilities throughout the country.

Both of these gentlemen rank very high in their respective fields and, therefore, were selected to represent the German gas industry as well as their respective organizations.

C. E. Packman, secretary-treasurer, and Roy E. Jones, president of the North Shore Gas Co., Waukegan, Ill., planned a full day for the men, covering the economic as well as the industrial management aspects of American public utility companies.

Dr. Mahlert and Dr. Schneider returned to Germany last month very much impressed with the American way of doing business and the free enterprise system, and with many new ideas for their work.

Report advises companies on acquiring electronic computers

A GUIDE for companies to follow in making decisions on an electronic computer has been issued by Controllership Foundation, Inc., research arm of the Controllers Institute of America, New York. It was prepared by the accounting firm of Peat, Marwick, Mitchell & Co., under the direction of Frank Wallace, partner in charge of its management controls department.

The handbook points out that a large-scale computer costs from \$500,000 to \$600,000 a year to operate, while a medium-scale one costs its user \$125,000 to \$200,000 a year. These rates include amortization of installation costs and programming; the latter may run as high as \$250,000 and frequently takes 25 to 50 man-years.

According to *Appraising the Economics of Electronic Computers*, some studies and applications indicate savings in clerical cost of \$100,000 to \$150,000, for medium-scale equipment, and \$500,000 to \$1 million annually for large-scale equipment. But the magnitude of the outlays involved—well into seven figures in the case of large-scale equipment—and the major operational adjustment which accompanies an installation, make exhaustive analysis imperative.

"Recommending an unsound application can be costly," the report declares. "On the other hand, unwarranted caution can deny a company a major instrument of competitive and financial leverage."

There are many intangible benefits which accrue from the use of electronic computers, such as better utilization of plant facilities, reduction of investment in inventory, better service to customers, and improved opera-

tions research techniques. But commercial acquisitions normally require approval by the board of directors, which usually demands assurance that the computer will at least break even.

The foundation study provides a blueprint for the "computer team" assigned to come up with the figures. The job usually takes about a year. In essence, the team's assignment consists of comparing the "before" costs of specific operations using present equipment and procedures with the "after" costs under a proposed computer application.

Under the approach detailed in the foundation's study, the operations to be performed are regrouped into "procedural areas" and the present costs of performing them are determined. Various computer systems are then compared to see which will do the work most economically.

The study team also computes the operating time and utilization percentages in order to determine whether more than one shift of usage is required; whether adequate time exists for daily preventive maintenance; and whether time will be left for processing additional areas or "blocks." This phase involves establishing a tentative work schedule for each computer under consideration, including the auxiliary equipment which will be required by each.

Other points to be weighed include site preparation and the yearly cost of site occupancy; air conditioning the electronic equipment; power consumption; furniture, paper forms and so forth; as well as amortization of programming and developmental cost.

"It does not follow that the least costly system should necessarily be adopted," the report observes. "If there is a wide discrepancy between the computer systems under consideration, the cost differential will weigh heavily. But frequently there is little or no significant cost differential. In such cases, less tangible factors must determine the decision. These include the utilization percentage and the flexibility of the various pieces of equipment in each system. In other words, the team will want to know the capacity of each system to absorb other application areas.

"There is also the question of unmeasurable benefits, such as the more timely development of management control tools and the potentials for operations research. The possibilities inherent in the latter will frequently tip the scales in favor of a computer installation as opposed to the present means of data processing, and occasionally in favor of one computer system as opposed to another."

Another consideration is whether the equipment should be bought or rented. This may be determined by tax considerations or by availability of capital, if not by company policy relating to fixed asset acquisitions.

"Based on a conservative five-year amortization rate," the foundation guide observes, "rental is cheaper than outright purchase on a one-shift operation; purchase is somewhat cheaper than rental on a two-shift basis; purchase is significantly cheaper than rental on a three-shift basis."

The report is available at \$4 a copy from the Controllership Foundation, 2 Park Ave., New York 16.

INGAA shows natural gas exhibit at National Housing Center

THE STORY of natural gas—where it comes from, how it is transported and distributed, and the problems and accomplishments of the industry in supplying natural gas for public consumption—is highlighted in a new exhibit recently installed at the National Housing Center, Washington, D. C.

The exhibit was prepared by the Independent Natural Gas Association of America. It is located near and coordinated with the National Housing Center's displays of gas-burning appliances sponsored by A. G. A.

A relief map of the U. S. in color shows producing areas, major pipelines, and large distribution centers. It is probably the most complete map of its kind in existence. Additional items of interest featured are a continuous self-contained projector utilizing a series of color slides, an actual section of 34-inch diameter pipelines, and a working model drill rig.

The explanatory statement at the entrance to this exhibit in a very few brief lines gives a bird's-eye view of the industry as well as a pledge:

"The natural gas industry presents this exhibit to portray the magnitude of the task performed in the public interest, in maintaining a continuous supply of natural gas to the 90 million gas-burning appliances in homes and many thousand industries. This great public service by the nation's sixth largest industry

supplies the fuel needs of over 100 million people. The industry will at all times endeavor to continue and improve its service to the public."

A lighted panel furnishes statistics of in-

dustry size, customers, miles of main, production, and investment.

The National Housing Center is the headquarters of the National Association of Home Builders.



INGAA's exhibit at National Housing Center includes color slides, a color map, photographs, and in the foreground, a section of pipeline. The building houses NAHB headquarters, and furnishes a central place for ideas, materials, and data of interest to architects, builders, and home buyers.

Pacific Lighting names Miller board chairman, Hornby president



R. W. Miller



R. A. Hornby

ROBERT W. MILLER has been elevated from president to chairman of the board of Pacific Lighting Corp., San Francisco, and Robert A. Hornby, former executive vice-president, has been named president succeeding Mr. Miller.

In moving up its two top executives, the board of Pacific Lighting is recognizing the growth of the system, which has brought a need for increased attention of management in matters affecting the corporation and its three subsidiaries—Southern California Gas Co., Southern Counties Gas Co., and Pacific Lighting Supply Company. In filling the post of chairman of the board as chief executive officer of the corporation, the corporation gains an additional officer at the top management level.

Mr. Miller has been president of the company since 1940 and associated with it since 1924. He was executive vice-president from 1929 to 1940. As president, he has guided the system through a period of great expansion, to the point where today its distributing subsidiaries serve more customers than any other natural gas system in the country. The

system now supplies natural gas to over 2 million independent active meters in southern California, as compared with 968,954 meters in 1940. Mr. Miller's elevation to board chairman fills a post vacant since the death in 1952 of the founder, C. O. G. Miller.

Robert A. Hornby has been the corporation's executive vice-president since 1950, and a part of the system since 1925. He has been the corporation's chief liaison officer with the distributing subsidiaries, and in more recent years operating head of Pacific Lighting Gas Supply Company in Los Angeles. Highly active in the American Gas Association, Mr. Hornby has for a number of years been on its board of directors and executive committee, and was for two years (1948 and 1949) head of its PAR Committee. He is a past president of the Pacific Coast Gas Association.

Personal and otherwise

Spokane names Hibler distribution manager, Melrose chief engineer

HOWARD M. HIBLER has been named manager of distribution of Spokane Natural Gas Company. Mr. Hibler's appointment was made concurrently with the appointment of C. J. Melrose as the company's chief engineer.

Mr. Melrose had been the company's general superintendent for a number of years,

Toman vice-president

PHIL F. TOMAN has been named vice-president of sales at Cascade Natural Gas Corp., Seattle. For the past three years Mr. Toman has been general sales manager of the company.

Mr. Toman has wide experience in sales and merchandising. He formerly was general manager of Love Electric Co., president of the Kirkland Marine Construction Company, and division lubricant manager in the Pacific Northwest for General Petroleum Corporation.

Swearingen promoted

FRANK SWEARINGEN, veteran Seattle utility company promotion man, has been appointed advertising promotion manager of Washington Natural Gas Co., Seattle.

Mr. Swearingen will handle the company's expanding sales promotion program and will act as liaison man with Washington Natural's advertising agency.

For the past two years, Mr. Swearingen has been doing utility company promotion work with an advertising agency. He is a University of Washington graduate.

Russell elected chairman of ACS division of gas and fuel chemistry

CHARLES C. RUSSELL, manager of the coal carbonization branch of the research department at Koppers Co., Inc., Pittsburgh, Pa., has been elected chairman of the American Chemical Society's division of gas and fuel chemistry for 1957. He succeeds Dr. Harlan W. Nelson of the Battelle Memorial Institute, Columbus, Ohio.

Howard R. Batchelder of Battelle was

chosen chairman-elect and R. Tracy Edinger of Eastern Gas and Fuel Associates, Boston, was re-elected secretary-treasurer.

Dr. Nelson, the retiring chairman, was named to represent the division on the ACS Council, with Robert J. Day of the Pittsburgh Consolidated Coal Company as alternate.

Dr. Russell, an authority on the carboniza-

tion of coal, received a BS degree in 1921 from the University of Illinois and has been with Koppers since 1927.

In addition to the American Chemical Society, the new chairman is a member of the American Institute of Mining and Metallurgical Engineers, the American Society for Testing Materials, and the American Gas Association.

FPC appoints Kenneth Smith to Bureau of Rates and Gas Certificates

THE Federal Power Commission has announced the appointment of Kenneth L. Smith as assistant chief of the FPC Bureau of Rates and Gas Certificates. Mr. Smith succeeds Edward M. Imhoff, who resigned effective Dec. 1.

Mr. Smith assumed his new duties Dec. 3. As one of three assistant chiefs of the Bureau of Rates and Gas Certificates he will be responsible for field investigations of the rates

of natural gas pipeline companies, electric utilities, and independent producers of natural gas.

Mr. Smith first joined the FPC in 1938 as principal examiner of accounts. In 1941 he was promoted to assistant chief accountant, holding that position until 1945, when he resigned to enter private practice. He then rejoined the commission in 1953 as a supervisory auditor, the position he held until last

month.

During 1945-51 he practiced as a consultant and also was an accounting professor at the University of Denver 1946-48; was manager of revenue for the City of Denver, Colo., for part of 1948; and utilities officer for the city 1950-51; and from 1951-53 was assistant controller of the Rural Electrification Administration.

Mr. Smith is a University of Illinois alumnus.

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ISSUE O

Announce top appointments at Canadian Western, Northwestern Utilities

B. F. WILLSON has been appointed vice-president of operations for both Canadian Western Natural Gas Co., Ltd., and Northwestern Utilities, Ltd.

Both companies also announce new appointments to the post of general manager. H. M. Hunter has been appointed general manager of Canadian Western and M. E. Stewart has been appointed general manager of Northwestern Utilities. All three men are

members of the American Gas Association.

Mr. Willson joined the Northwestern staff in Edmonton in 1945, became assistant general manager of that company in 1953. A year later he was transferred to Calgary to assume the post of director of administrative services, an inter-company department of both utilities. Last year he was elected to the board of directors of both companies. He is a graduate of the University of Alberta.

Mr. Hunter, also a graduate of the University of Alberta, joined the geological department of Canadian Western in 1927. He was appointed general superintendent of that company in 1946, and manager of the plant division in 1956.

Mr. Stewart joined the staff of Northwestern Utilities in 1949, was appointed assistant general manager of that company last year. He is a graduate of University of Toronto.

Panhandle reports changes in supply area and operating headquarters

PANHANDLE Eastern Pipe Line Company has announced changes which effect a realignment of personnel in the supply area of the pipeline system and in its operating headquarters at Kansas City, Missouri.

Robert B. Harkins has been named assistant to the vice-president and will be located at Kansas City.

The functions of the operating department have been separated into two divisions.

George B. McClellan, as general manager of the production and supply division, will have his headquarters at Liberal, Kansas. Francis J. McElhatton, as general manager of the gathering and transmission division, will be headquartered at Kansas City.

The following four staff offices have been established. Evan A. Thomas will be director of the office of resource planning, at Liberal. William C. Marrs will be director of the of-

fice of operational planning and budgeting; Herbert H. Duff, director of the office of industrial relations; and Lester A. Mussman, director of the office of purchasing and stores.

Fifteen other appointments have been made within the production and supply division and the gathering and transmission division.

Clifford R. Horn, assistant to the general manager, will direct the proration and reservoir engineering activities.

Patricia Hendrick joins Harper-Wyman as home service director

PATRICIA HENDRICK has been appointed home service director of the Harper-Wyman Company. Miss Hendrick will supervise the operation of a fully-equipped test kitchen in the general offices in Chicago. She will direct all home service activities including the field testing of Harper-Wyman gas range

equipment, as well as basic testing of current and new products for the engineering research and the sales departments.

Miss Hendrick brings to Harper-Wyman twelve years of practical experience in the home economics field. She formerly was home service director of the Tulsa district for the

Oklahoma Natural Gas Company.

A graduate of the Oklahoma College for Women with a BS degree in Vocational Home Economics and Lifetime Teaching Certificate, she has had graduate work at Tulsa University and Texas State College for Women and two years of teaching experience.

Boothby honored for work on attracting firms to Washington, D. C.

AN AWARD for outstanding service as chairman of the Washington Board of Trade's Economic Development Committee was presented to Everett J. Boothby, president of the Washington (D. C.) Gas Light Company.

Mr. Boothby received the award at the Nov. 16 membership dinner in Washington's Mayflower Hotel. It was presented by S. Ross Lipscomb, president of the Greater Washington Industrial Council, Inc.

As chairman, Mr. Boothby heads a 47-man

committee dedicated to attracting new industrial firms and trade associations to metropolitan Washington. Significant progress has been made by the committee since it was organized in February 1954. Mr. Boothby is a director and past president of A. G. A.

Names in the news—a roundup of promotions and appointments

UTILITIES

Rockland Light and Power announces that Palmer Y. Epler, associated with the company since 1927, has been appointed assistant treasurer and assistant secretary. He was formerly plant investment department manager and chief accounting officer.

Bruce Kinney has been named sales manager for the northwestern New Mexico district of Southern Union Gas. He will be in charge of residential, commercial, and industrial sales activities, including a sales program for appliance dealers, architects, builders, and contractors.

Pipelines

Lloyd J. Taylor, a veteran of 16 years in the petroleum industry, has joined Trunkline Gas as superintendent of the land department for production activities.

A new appointment and two promotions have been effected by Transcontinental Gas Pipe Line. Harold E. Vaughan, previously with Continental Oil for 17 years, has been named assistant to the vice-president for gas supply. Jack F. Gale, gas contact representative, has been promoted to the new

position of supervisor, gas purchases. N. W. Lassiter Jr., senior engineer, has been promoted to division superintendent in the compressor stations department.

Texas Eastern Transmission announces the appointment of John R. Blewer as manager of community and stockholder relations. He will supervise the company's community and stockholder relations program, and its advertising activities. Leon M. Sipes, editor of *The Inch*, has been promoted to manager of publications. He will now supervise editing and production of company publications including *The Inch* and *Texas Eastern News*.

MANUFACTURERS

Robert B. Kitzmiller has been named Los Angeles district sales manager and A. J. Komich has been named gas products manager of Rockwell Manufacturing Company's meter and valve division. Mr. Kitzmiller joined Rockwell in 1934. Mr. Komich in 1946.

John P. Kimball has been appointed director of the Norge Sales Institute, a new department of Norge Division, Borg-Warner Corporation. Mr. Kimball will super-

serve development of Norge home appliance sales techniques and competitive data for the Norge sales force, distributors, and dealers. He will also direct the Norge field sales training managers.

New manager of engineering at Selas is Robert E. Buckhardt, who has been active in the furnace industry for the past 23 years. He will be responsible for Selas furnace and oven designs and engineering applications as related to the steel, metalworking, glass, ceramic, and other industries.

Servel has promoted Dick Geier to advertising and sales promotion manager of the home appliance division. Mr. Geier, who has been with Servel since 1942, was formerly supervisor of advertising and sales promotion.

Charles E. Yeoman has been appointed manager of Coleman's sales branch. He joined the company in 1952, and has served in the field sales organizations of both the outdoor products and heating and air conditioning divisions of the company. Succeeding him as Southeastern regional sales manager of the heating and air conditioning division is Lawrence T. Ash.

Credit picture

(Continued from page 19)

crease of 0.8 per cent in disconnect notices issued nationally, we have gone to an increase of one per cent as portrayed in the current report. A most interesting observation in this report is the sharp increase in the number of service disconnections for non-payment of bills, from 5.2 per cent to 9.3 per cent. Especially noteworthy is the fact that this increase was accomplished with only a minor increase in the number of disconnect notices issued.

The trend toward moderate increases in notices and concurrent material increases in service disconnections prevalent at least in the last two reports would indicate that most companies have adopted a more firm collection policy as regards current or active accounts. Certainly this trend will prompt further study.

The trend toward more adequate security deposit coverage in some areas continues with a national average gain of 8.1 per cent in number of deposits outstanding as compared to the previous reporting period. However, four geographical areas reported nominal decreases. The trend is clearly indicated when we note that the increase in deposit coverage is roughly two and one half times greater than the overall increase in number of customers.

The dollar amount of deposits on hand again increased at a rate greater than the number of deposits, even in the four geographical areas reporting

a decline in number. The fact that all areas reported an increase in dollars of deposits outstanding further indicates the trend towards more adequate coverage because of the economic impracticability to restrict amounts and number of bills owing to a minimum before termination of service. It also indicates the efforts of utilities to obtain sufficient security coverage commensurate with the ever-mounting average yearly service usage.

A breakdown of the charge offs evinces an almost identical trend as experienced in the period ending December 31, 1955, in that 65 per cent of the reporting companies suffered increases in net uncollectible losses as shown by the following summary by number and type of company.

Net Charge-Off	Number of Companies
Gas Companies	Increase 12
Combination Companies	Increase 17
Electric Companies	Increase 20
Total	—
Gas Companies	Decrease 8
Combination Companies	Decrease 8
Electric Companies	Decrease 11
Total	—
	27

Two factors, the increased number of customers together with a higher average yearly service usage, present an ever-increasing challenge to utility collection men to attempt to retard their dollar bad debt losses which, as indicated by the 10.8 per cent increase in amounts charged off for this period, are still spiralling upwards in most sections of the country. In three of the

seven geographical areas, increases in sales helped to bring about a reduction in the ratio of net charge offs to sales. In two other areas, this ratio increased substantially despite favorable sales figures.

A new feature, included in the detailed summary of Credit Picture statistics mailed to each of the 76 participating companies, was a breakdown of the experiences of the individual utility divisions of the combination companies. Through this medium the combination companies can more accurately compare their performance with their counterparts on a nationwide basis.

A careful analysis of the reports submitted by the 76 participating companies indicates several trends which are certainly favorable in the long run to the continued success of the utility industry. A steady consistent growth in the number of customers is evident, but even more vital is the sharp increase in the dollar value of sales to these customers.

It is unfortunate from a customer relations standpoint that the increase in customers and sales is accompanied by the necessity for an increase in dollars retained as security deposits, but it appears that such protection is considered necessary by the majority of companies as the only practicable means of averting drastic losses. The material increase in charge offs expressed in cents per customer is a factor of major significance for utility collection and credit managers to observe.

Trade groups seek repeal of excise tax on water heaters

MANUFACTURERS of gas and electric water heaters charged last month that they and their customers are victims of an "absurdly discriminating" federal excise levy that amounts to "a tax on cleanliness."

Units of the Gas Appliance Manufacturers Association and the National Electrical Manufacturers Association revealed that they had joined in filing a brief with Congress for reclassification of their product. "Of more than 38,000 plumbing and heating items, the water heater is the only one taxed," declared L. R. Mendelson, GAMA leader, at a New York meeting of the two groups. He said that manufacturers are turning out gas, electric, and other types of water heaters at the rate of about four million a year.

"These water heaters," he declared, "fill a vital role in the country's effort to provide for the expanding population through home building and modernization. Because the tax nearly doubles en route from manufacturer

to ultimate consumer, and because finance charges may still further enlarge the effect, continuation of this absurdly discriminating levy must hurt the entire building industry."

Mr. Mendelson stated that demand for water heaters is closely geared to family size—so much so that a plumber seeking to determine a family's hot water needs will inquire particularly about children in the home.

"The tax on water heaters not only is a tax on health and cleanliness in general but one which hits particularly the hardest-pressed people in America, those striving to bring up children amid acute family budget pressures."

Mr. Mendelson listed these points in a summary asking repeal of the five per cent excise levy as it applies to water heaters.

1. The water heater is an integral part of plumbing, and plumbing is not otherwise taxed.

2. There is no tax for those who own househeating systems in which water heating

units are incorporated.

3. The revenue for the government is small, particularly after heavy collection expenses and such net revenue "is absolutely trivial compared to billions generated by the home building industry now facing such grave difficulties."

4. Federal authorities long have recognized the essential health role of water heaters and have permitted their financing as integral parts of the permanent plumbing equipment of dwellings.

The excise was designed as an emergency revenue measure during the Korean War period. Among its original goals, Mr. Mendelson said, was to divert essential materials from civilian use into urgently needed military production. "Need for this measure long since has passed. Government policies now," he declared, "should include every possible step to bring rising standards of housing in an expanding population."

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New A.G.A. members

Associate Member

Carl M. Loeb, Rhoades & Co., New York, N.Y. (Thomas K. Morawitz)

Individual Members

Ben C. Altman, Metropolitan Utilities District, Omaha, Neb.

Frederick W. Amadon Jr., Washington Gas Light Co., Washington, D.C.

Edward V. Amerman, Public Service Electric & Gas Co., New Brunswick, N.J.

Newell S. Beardow, The Bridgeport Gas Co., Bridgeport, Conn.

Roland J. Blank, Michigan Wisconsin Pipe Line Co., Detroit, Mich.

Henry B. Brockmeyer, The New Britain Gas Light Co., New Britain, Conn.

Kathy Brown, RCA Victor Co. Ltd., Toronto, Ont., Can.

Edward C. Clark, General Electric Co., Schenectady, N.Y.

Arthur T. Cockle, Sui Gas Transmission Co. Ltd., Karachi, Pakistan

William D. Covington, Texas Eastern Transmission Corp., Shreveport, La.

Marcel L. DeCraene, Natural Gas Pipeline Co. of America, Chicago, Ill.

D. C. Degnan, Gas Consumers Service, San Francisco, Calif.

D. G. Demos, Norwalk Valve Co., South Norwalk, Conn.

Howard D. Dickey, Cincinnati Gas & Electric Co., Cincinnati, Ohio

James F. Donnelly Jr., A. O. Smith Corp., Kankakee, Ill.

Robert W. Eichorn, Lennox Industries Inc., Marshalltown, Iowa

John L. Gere, Cities Service Gas Co., Oklahoma City, Okla.

Robert L. Gourley, Heathbath Appliances, Inc., Wellesley, Mass.

Philip S. Harper Jr., Harper-Wyman Co., Chicago, Ill.

Edward N. Henderson, Arkansas Louisiana Gas Co., Shreveport, La.

James Henrichs, Gas Consumers Service, Detroit, Mich.

Creighton R. Hodges Jr., Texas Eastern Transmission Corp., Shreveport, La.

Johns Hopkins, The United Gas Improvement Co., Philadelphia, Pa.

Everett A. Kelsey, The Berkshire Gas Co., Pittsfield, Mass.

Janet M. Lappin, Philadelphia Gas Works

Div., UGI Co., Philadelphia, Pa.
Edward A. Lehman, Philadelphia Electric Co., Philadelphia, Pa.

Coleman W. McCampbell, Moore Publishing Co., Inc., New York, N.Y.

James F. McCarthy, Providence Gas Co., Providence, R.I.

Mark J. Millard, Carl M. Loeb, Rhoades & Co., New York, N.Y.

John J. Moffatt, Norge Sales Corp., Chicago, Ill.

John H. M. Paton, Gas Consumers Service, Long Island City, N.Y.

Vernon E. Percell, The Gas Service Co., Kansas City, Kans.

J. J. Rader, Gas Consumers Service, Washington, D.C.

Howard A. Remke, The Cincinnati Gas & Electric Co., Cincinnati, Ohio

Robert S. Roulston, Long Island Lighting Co., Garden City, N.Y.

Kenneth J. Stanton, Northern Illinois Gas Co., Bellwood, Ill.

Harry L. Stearns, Norge Sales Corp., Chicago, Ill.

Edgar Stembler, Long Island Lighting Co., Mineola, N.Y.

C. W. Thomas, Gas Consumers Service, Washington, D.C.

William A. Veasey, Providence Gas Co., Providence, R.I.

Electronics seminar

(Continued from page 14)

system design, two weeks training in flow charting, and two weeks training in programming.

From outside the company, three IBM trained people and two technically trained people were employed to maintain the equipment.

Twelve man are being trained as operating personnel.

The programming staff is assigned as follows: a five-man team to the programming area, a six-man team to the EDPM system design, and a three-man team to planning and training for full conversion. Full operation on the computer is scheduled for 1959.

Walter J. Ott of The Cincinnati Gas and Electric Company described the activities of the Arizona Public Service Company in ordering and preparing for

the installation of Univac.

The feasibility study indicated that due to the rapid growth of the company, present equipment would be unable to handle operations in a few years. By projecting the growth of the company and the resulting increase in cost under present operations, the break-even point for a large scale computer was determined to be in ten years.

All employees of the company were notified of the need for and the opportunity to become programmers. Out of a total of 2,233 employees approximately 300 expressed interest in learning programming. All of the 300 employees were interviewed and were finally screened to 80. The 80 employees were given eight hours of tests. Twenty-eight employees were selected and were given eight weeks of training in Univac programming. It is estimated that 165 man-months are required to complete the

system design.

J. W. Balet, Consolidated Edison Company of New York, reported on the successful application of an IBM 705 computer to general accounting. In April, 1955, the company ordered an IBM 705 computer. The physical installation of the computer was completed on May 29, 1956. June 1 payroll operations were converted to the computer. July 30 payroll distribution was converted to the computer. The computer time required for the payroll and distribution operations is one-third of the first shift.

Through November 30, 60 employees have been released from the payroll operation. A net reduction of \$39,000 per year in operating cost has been achieved.

W. D. Sweetman closed the meeting by expressing the gratitude of the utility industry to those members who are pioneering in the application of computers.

Energy demands

(Continued from page 18)

and that significant improvements in recoverability are now being accomplished or promised for the future, a total of 300 billion barrels (including past produc-

tion) as the ultimate reserves of the U.S. and of the adjoining Continental Shelves seems to be a reasonable figure, according to the U.S. Bureau of Mines.⁸

Based on the quantity of petroleum that has already been discovered in the coastal belt of Texas and Louisiana in an

area comparable in size to the area of the adjoining Continental Shelf, the petroleum reserves of the Continental Shelf adjacent to the Texas and Louisiana coasts may total approximately 13 billion barrels. By a similar comparison the potential reserves of the shelf area adjacent

to California are estimated to be about two billion barrels. It should be emphasized, however, that these two areas probably have greater oil and gas possibilities than any other part of the Continental Shelf adjacent to the U. S.

Most oilmen will be skeptical that we can find 100 billion barrels of oil in this country in the next 20 years. But in the past the best informed among us, looking into the future, have always underestimated the volume of oil we would discover over any ensuing 20 years.

During the first 35 years of our search for oil in the U. S. up until 1895, we found only three billion barrels. Yet this was the period when the number of undiscovered oil fields was at a maximum. We found only enough oil to meet the demand, which was not insistent.

During the next 20 years, with fewer oil fields remaining to be found, we discovered about six billion barrels of oil. During the next 20 years, from 1916 to 1935, with a vastly expanded demand from the rising flood of automobiles, we found about 21 billion barrels of oil. We had entered this period with less than four billion barrels of proved reserves and eminent authorities were declaring "We are running out of oil." Yet over the last 20 years we have found 55 billion barrels of oil.

Both the Paley Report and Putnam have assumed that future oil which would cost more than 30 per cent above 1950 costs should not be regarded as economically recoverable since it would invite increased imports and large scale processing of shale oil. (Posted prices are today already 10 per cent higher on the Texas Gulf Coast.) Such an assumption neglects completely the fact that increased domestic production costs are apt to be accompanied by at least a partial increase in the cost of other alternatives, or that national policy may still dictate that domestic natural sources of oil be developed. The 30 per cent price limitation caused Putnam to exclude from economically recoverable oil reserves the preponderance of the off-shore oil, much of which is currently being developed.

All estimates of ultimate recoverable gas reserves have depended on the multiplication of assumed ultimate recoverable oil reserves by a gas-oil ratio. Hinson⁴ assumed a ratio of five Mcf per barrel of oil, the Paley Report assumed six Mcf and most other studies have used estimates varying between three and five Mcf. Hinson included in his presentation

a table indicating that, for the 15 years ending 1953, the gas discovered per barrel of oil discovered was 5.8 Mcf.

The reports of the API and A. G. A. Reserves Committees indicate that, for the nine years ending in 1955, new discoveries provided a ratio of 8.5 Mcf per barrel. All authors acknowledge that the ratio is increasing with the trend toward deeper drilling and higher pressures.

In 1950, L. F. Terry, of the Chase-Manhattan Bank, estimated the ultimate gas reserves in the U. S., including the Continental Shelves, to be 510 trillion cubic feet. This estimate was based on the assumption that the search for and production of an amount of oil called for by Weeks' estimate of ultimate reserves would result in the discovery of six Mcf of gas for each barrel of oil.

In the U. S. the assumed ratio of six Mcf has turned out to be low. It was slightly more than seven Mcf during the period 1950 to 1954 and is still headed upward.

Considering that it has been necessary in the past to increase both the estimate of ultimate oil reserves and the ratio of gas to oil discoveries, and taking into account the trend toward deeper and deeper drilling, it is likely that larger and larger reserves of natural gas will continue to be found. Thus, a considerable upward adjustment of the Terry estimate is now required. For the purpose of this discussion the ultimate reserves of gas in the U. S. may be assumed to be at least 1,000 trillion cubic feet, and have been so estimated by the Bureau of Mines.

This estimate of 1,000 trillion cubic feet is the highest estimate yet offered publicly, but even it infers a most conservative gas-oil ratio of 3.33 applied to an estimate of 300 billion barrels. From this total ultimate reserves should be deducted cumulative production to date of 125 trillion cubic feet, leaving remaining reserves conservatively, at 875 trillion.

Wallace Pratt estimates remaining economically recoverable gas reserves in the U. S. at 725 trillion cubic feet, by applying a gas-oil ratio of five to his estimate of 170 billion barrels of liquid hydrocarbons, and then deducting production to date. According to Pratt, the estimates for natural gas are based on the estimates for oil. Oil and natural gas are intimately associated in their occurrence and the bulk of our natural gas reserves have been discovered as an incident to the search for oil.

Historically, in the U. S. 4,000 to 5,000

cubic feet of natural gas have been discovered for each barrel of oil. In recent years the ratio has been higher—6,000 to 7,000 cubic feet of natural gas per barrel of oil.

These estimates exclude completely any consideration of the availability of reserves in Mexico and Canada for U. S. consumption. It seems likely that such reserves will be significant. A recent statement by an official of Alberta has indicated that reserves in that province alone will eventually reach 100 trillion cubic feet, most of it available for export.

Finally, no one has attempted to analyze the possibilities of water-borne transportation of natural gas from non-North American sources using self-propelled barges and liquefied natural gas. Although such work is only in its infancy today, who can foretell future technological developments of this nature?

Assuming a steady increase in use of petroleum and natural gas in the U. S., it is likely that by the end of 1980 more than half the estimated ultimate reserves of 300 billion barrels will have been consumed, and that about a half also of the estimated ultimate gas reserves of 1,000 trillion cubic feet will have been consumed.

The reasoning in this memorandum assumes that appropriate economic incentives will be present to foster an accelerated discovery rate so that new supplies will become available when needed for supplying the nation's increased demands. It also assumes that deliverability will be maintained adequately to provide the increased requirements of natural gas in spite of declining pressures in some of the older producing fields. Presumably technological improvements in recovery technique will assist in this area by permitting substantially higher proportions of gas in underground reservoirs to be made economically available.

Conclusions

- Total available remaining supply of natural gas within the U. S. is at least 850 trillion cubic feet.
- Total annual demands of the nation for natural gas will be 22½ trillion cubic feet by 1975.
- It seems likely that the industry will easily be able to supply this quantity of gas; prices may be higher, but competing fuels (and all other commodities) will also be more costly.

(Continued on page 48)

Consolidated Natural elects Corrin to board

E WAYNE CORRIN has been elected a director of Consolidated Natural Gas Company to fill a vacancy in the board resulting from an increase in board membership from 11 to 12. Mr. Corrin is president of two of Consolidated's subsidiaries, Hope Natural Gas Company of Clarksburg, W. Va., and The River Gas Company of Marietta, Ohio.

His association with the Hope company began in 1933 as a leaseman and he has held positions in that company as superintendent of right-of-way, attorney, vice-president, and executive vice-president. He has been a director of the Hope company since 1951, and a member of the board of directors of River Gas since May 1956.

Appoint Carolyn Byron home service director

CAROLYN BYRON has been appointed home service director for Cascade Natural Gas Co., Seattle, Washington. She will conduct an educational program on the use of gas appliances in the home and the advantages of natural gas in homemaking. Eventu-

ally, she will establish and supervise home service departments in all of Cascade's district offices. Miss Byron, a home economics graduate of the University of Washington, formerly was home service director at Harper-Maggee, and F. B. Connally Company.

Geologist C. S. Corbett joins Peacock

CS. CORBETT, geologist, has joined Peacock Corp., Westfield, New Jersey. Dr. Corbett will devote his time to geological studies and consultations in connection with the underground storage of LP-Gas and natu-

ral gas. This is a new service offered by the company in addition to the design and installation of aboveground facilities. Dr. Corbett has taught in leading colleges and has served in important posts with oil companies.

Fouse elected to board of Brooklyn Borough

RALPH W. FOUSE, president and assistant treasurer of the Brooklyn Borough Gas Co., has been named to an additional post with the company as a member of its board of directors. Mr. Fouse is the 1957 vice-

chairman of the Rate Committee of the American Gas Association and a past chairman of its Statistical Subcommittee. He joined the utility in 1951 as assistant vice-president and became vice-president in 1953.

Hughes awarded 25-year pin at Southern Union

Scott HUGHES, first vice-president and director of Southern Union Gas Co., received a diamond-set service award pin last month in recognition of 25 years of continuous service with the natural gas utility.

Mr. Hughes joined the gas company's legal staff after receiving his law degree from the University of Texas in 1931. He was named vice-president in 1945, first vice-president in 1954, and was elected to the board in 1955.

Pioneer Service names E. M. Imhoff treasurer

EDWARD M. IMHOFF has been elected treasurer of Pioneer Service and Engineering Co., Chicago, succeeding the late Raymond F. Linehan. Mr. Imhoff was formerly assistant chief, Bureau of Rates and Gas Cer-

tificates, Federal Power Commission. Before that, he served on the accounting staff of the Wisconsin Public Service Commission for seven years ending in 1939. Mr. Imhoff is a graduate of Marquette University.

Banks elected director of Servomechanisms

FMARION BANKS, past president of the American Gas Association, has been elected a director of Servomechanisms, Inc. The company designs and manufactures electronic and

electro-mechanical control systems, computers, and components. Mr. Banks is president and general manager of the Southern California Gas Company.

Medina saves child

SEVENTY-ONE YEAR OLD Vicente Medina, a retired employee of Pacific Gas and Electric Co., Seattle, has been honored by that company for his heroic action in saving a child from drowning. He was fishing in a powerhouse reservoir last summer, when he noticed the child tumble into the 26-foot deep pool. He jumped in to rescue her despite the fact that he hadn't attempted to swim in half a century. The award, a special citation and gold watch, was presented to him by O. R. Doerr, vice-president in charge of sales, at a special testimonial dinner. Mr. Medina retired on pension from PG&E in 1950 after more than 32 years of service, most of it in the East Bay division gas department.

THREE Northern Illinois Gas Company employees were honored Dec. 5 at the utility's annual management meeting for quick thinking and prompt action that helped save six lives. Recipients of the President's Award for the Saving of Human Life were Ora Harmon, who works at the company's plant in Skokie; LeRoy Marconi, credit department employee; and Albert McCloud, operating foreman in the Joliet area. Presentation of the awards was made by Marvin Chandler, the utility's president. Five Northern Illinois Gas employees now have received this special award established last year by the utility's board of directors to "recognize individual heroism, presence of mind and prompt action of employees resulting in the saving of life."



1957

FEBRUARY

- 3-5 •Public Utility Buyers' Group, National Association of Purchasing Agents, The Brown Hotel, Louisville, Ky.
- 4-6 •A. G. A. Home Service Workshop, King Edward Sheraton Hotel, Toronto, Ontario
- 4-8 •Western Winter Radio-Television and Appliance Market, Western Merchandise Mart, San Francisco, Calif.
- 25-28 •American Society of Heating and Air Conditioning Engineers, Chicago, Ill.

MARCH

- 7 •GAMA Automatic Gas Range Conference, Barbizon Plaza Hotel, New York City.
- 11-15 •National Association of Corrosion Engineers, Kiel Auditorium, St. Louis, Mo.
- 21-22 •New England Gas Association, Annual Meeting, Hotel Statler, Boston, Mass.
- 25-27 •Mid-West Gas Association, Hotel Nicollet, Minneapolis, Minn.
- 25-27 •A. G. A. General Management Section, Annual Conference, Edgewater Gulf Hotel, Edgewater Park, Miss.
- 28-29 •Oklahoma Utilities Association, Annual Convention, Tulsa Hotel, Tulsa, Okla.

APRIL

- 8-10 •GAMA Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.
- 8-10 •National Conference of Electric and Gas Utility Accountants, Sheraton Park Hotel, Washington, D. C.
- 8-11 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Rice Hotel, Houston, Texas.
- 16-18 •A. G. A. Sales Conference on Industrial and Commercial Gas, Jung Hotel, New Orleans, La.
- 25-26 •Indiana Gas Association, Annual Meeting, French Lick-Sheraton Hotel, French Lick, Ind.
- 29-May 1 •Southern Gas Association, New Orleans, La.

MAY

- 6-7 •A. G. A. Residential Gas Section, Eastern Sales Conference, William Penn Hotel, Pittsburgh, Pa.
- 6-8 •Air Conditioning and Refrigeration Institute, The Homestead, Hot Springs, Va.
- 6-10 •National Restaurant Association Convention and Exposition, Navy Pier, Chicago, Ill. (A. G. A. will exhibit)
- 7-9 •A. G. A. Research and Utilization Conference, Hotel Carter, Cleveland, Ohio.

Personnel service

SERVICES OFFERED

Chemical Engineer—14 years' experience including over five years in natural gas work on deliverability studies, natural gasoline plant design and start-up, transmission, conditioning, measurement, automatic control, underground gas storage, and preparation of the technical aspects of FPC cases. Desires opportunity to use training and experience in a position of growth potential. MS in chemical engineering, married, 36 years old. 1854.

Gas Engineer—Desires position in gas utility where 25 years' experience in engineering, operations and management will be of value. (45) References. 1855.

Executive position—experienced natural gas man desires executive position with a natural gas company. Registered professional engineer with 20 years' experience in many phases of natural gas operations including distribution and transmission, financing, sales, federal and state regulatory matters, construction supervision, contract negotiations and top management. Well known throughout the gas industry, highly capable of handling top management position. Age 40, married. More detailed information and references upon request. 1856.

Superintendent or General Foreman—with long experience with all types of gas, manufacture, distribution and service. Well recommended. Employed at present. 1857.

Sales Manager—home appliance sales experience (9 years wholesale, 2 years retail manager), can hold sales training meetings, handle advertising, engineering background. Minimum salary \$10,000. 1858.

Director of Training and Executive Development—broad experience with major companies. Fully capable of improving effectiveness of sales force. Thoughtful human relations approach to development of supervisory and executive personnel. Excellent academic background. 1859.

Public Relations Director—excellent corporation experience. Versatile, creative, imaginative, capable of promoting practical program. Has

directed community relations and company-distributor relations programs; fully experienced in organizing conference, making speeches, preparing public relations literature. Fine academic background; top references. 1860.

POSITIONS OPEN

Young Engineers—Philadelphia utility with divisions in Eastern Pennsylvania can use four recent engineering graduates. Will be given groundwork in all departments of company before regular assignment. In reply please state age, education, experience—if any. 0830.

Engineers—Philadelphia utility can use two engineers experienced in gas distribution. Please state age, education, experience and other background information in replying. 0831.

Home Service Supervisor—Woman to take charge of new home service department opening in city 40 miles from Milwaukee, Wisconsin. Progressive community, 10,000 population, lake area. Degree in home economics required; experience in home service or allied field necessary. Give full details as to education, experience, marital status and salary expected in first letter. 0832.

Gas Service Engineer—fast growing progressive Midwest gas utility with 14,000 customers is seeking a graduate engineer with particular experience in customer service to take immediate position as assistant service supervisor leading to position as supervisor within three years and possible higher executive positions. Must have executive ability to supervise and train service men and other personnel in customer relations. Age bracket under 40 years. Give complete background, experience and references. Replies will be held confidential. 0833.

Economist-writer—for economic consulting firm in natural gas—public utility field, in Washington, D. C. Degree in economics with courses in public utilities preferred. Legal background helpful. Salary open. Replies held in confidence. 0834.

Submit resumé with salary requirement. 0834.

Gas Rate Engineer—Current vacancy in Lansing, Mich., as Assistant Chief, the Gas Section of the Public Utilities Division of the Michigan Public Service Commission. Degree in engineering required, preferably in mechanical or chemical—and professional experience with a public gas utility as a government agency regulating such service. Salary range \$6,600 to \$9,750 per year depending on qualifications. Submit complete resumé and desired salary to Michigan State Civil Service Commission, Equipment and Placement, Lansing 13, Mich. 0835.

Gas Engineer—graduate engineer with four years or more experience and background in gas transmission, engineering and operations—design of compressor station, pipeline, and related facilities—for position of staff engineer, chief engineer's office of large natural gas transmission company. Location area—Pacific Northwest states. A considerable opportunity for development exists in this position. Salary commensurate with qualifications. Replies will be held confidential. 0836.

Chemical or Mechanical Engineer—unusual opportunity for able, ambitious young man in research, development and testing relating to gas appliances, burners and combustion. Part of time spent in IGT education program, basic research, preparation of text material. Opportunity for graduate study; work in modern surroundings with finest scientific equipment and accomplished associates; academic atmosphere and industrial pay. 0837.

Chemical, Mechanical, Petroleum or Natural Gas Engineer—unusual opportunity for able, ambitious young man in natural gas transmission research; fluid flow, pipeline design and economics; engines and compressors; thermodynamics. Part of time spent in IGT education program, basic research, preparation of text material. Opportunity for graduate study; work in modern surroundings with finest scientific equipment and accomplished associates; academic atmosphere at industrial pay. 0838.

Energy demands

(Continued from page 46)

- (d) Substantial amounts of natural gas will still be available after 1975 for supplying the nation's needs for more than an additional decade.
- (e) In spite of adequacy of supply for the nation as a whole, varying regional supply and cost problems warrant expanded research on substitute pipeline gases, as a means of developing economical alternatives to control costs of the natural product, and to extend the years of life

of the natural product by supplementation.

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Industrial relations

(Continued from page 20)

cluded. The reason given for requesting the information was that it was necessary for the "intelligent and equitable administration of the agreement."

The employer did not object to furnishing the names and job classifications of employees but refused to supply the additional information requested. The union charged an unlawful refusal to bargain, and the NLRB agreed

with the union.

Reversing the Board's decision, the 9th CA held that a union's request for payroll data need not "painfully, laboriously, or absolutely demonstrate in detail a relevancy. But," it continued, "at some time or some place some specific relevancy should be shown or facts should be shown whereby one could say that the employer ought to know anyway without demonstration the relevancy of the information to the relationship of the parties."

The court felt that the relevancy of the demand to these negotiations was at no time demonstrated.

The court concluded by stating that, for the union to be entitled to such information, there must be under all of the circumstances a showing of reasonable need of the information to meet a condition. And if the reason is not obvious, the court said, "then he who asserts the claim should demonstrate to him against whom it is asserted some relevant particularity."

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